Über dieses Buch

Dies ist ein digitales Exemplar eines Buches, das seit Generationen in den Regalen der Bibliotheken aufbewahrt wurde, bevor es von Google im Rahmen eines Projekts, mit dem die Bücher dieser Welt online verfügbar gemacht werden sollen, sorgfältig gescannt wurde.

Das Buch hat das Urheberrecht überdauert und kann nun öffentlich zugänglich gemacht werden. Ein öffentlich zugängliches Buch ist ein Buch, das niemals Urheberrechten unterlag oder bei dem die Schutzfrist des Urheberrechts abgelaufen ist. Ob ein Buch öffentlich zugänglich ist, kann von Land zu Land unterschiedlich sein. Öffentlich zugängliche Bücher sind unser Tor zur Vergangenheit und stellen ein geschichtliches, kulturelles und wissenschaftliches Vermögen dar, das häufig nur schwierig zu entdecken ist.

Gebrauchsspuren, Anmerkungen und andere Randbemerkungen, die im Originalband enthalten sind, finden sich auch in dieser Datei – eine Erinnerung an die lange Reise, die das Buch vom Verleger zu einer Bibliothek und weiter zu Ihnen hinter sich gebracht hat.

Nutzungsrichtlinien

Google ist stolz, mit Bibliotheken in partnerschaftlicher Zusammenarbeit öffentlich zugängliches Material zu digitalisieren und einer breiten Masse zugänglich zu machen. Öffentlich zugängliche Bücher gehören der Öffentlichkeit, und wir sind nur ihre Hüter. Nichtsdestotrotz ist diese Arbeit kostspielig. Um diese Ressource weiterhin zur Verfügung stellen zu können, haben wir Schritte unternommen, um den Missbrauch durch kommerzielle Parteien zu verhindern. Dazu gehören technische Einschränkungen für automatisierte Abfragen.

Wir bitten Sie um Einhaltung folgender Richtlinien:

+ *Nutzung der Dateien zu nichtkommerziellen Zwecken* Wir haben Google Buchsuche für Endanwender konzipiert und möchten, dass Sie diese Dateien nur für persönliche, nichtkommerzielle Zwecke verwenden.

+ *Keine automatisierten Abfragen* Senden Sie keine automatisierten Abfragen irgendwelcher Art an das Google-System. Wenn Sie Recherchen über maschinelle Übersetzung, optische Zeichenerkennung oder andere Bereiche durchführen, in denen der Zugang zu Text in großen Mengen nützlich ist, wenden Sie sich bitte an uns. Wir fördern die Nutzung des öffentlich zugänglichen Materials für diese Zwecke und können Ihnen unter Umständen helfen.

+ *Beibehaltung von Google-Markenelementen* Das "Wasserzeichen" von Google, das Sie in jeder Datei finden, ist wichtig zur Information über dieses Projekt und hilft den Anwendern weiteres Material über Google Buchsuche zu finden. Bitte entfernen Sie das Wasserzeichen nicht.

+ *Bewegen Sie sich innerhalb der Legalität* Unabhängig von Ihrem Verwendungszweck müssen Sie sich Ihrer Verantwortung bewusst sein, sicherzustellen, dass Ihre Nutzung legal ist. Gehen Sie nicht davon aus, dass ein Buch, das nach unserem Dafürhalten für Nutzer in den USA öffentlich zugänglich ist, auch für Nutzer in anderen Ländern öffentlich zugänglich ist. Ob ein Buch noch dem Urheberrecht unterliegt, ist von Land zu Land verschieden. Wir können keine Beratung leisten, ob eine bestimmte Nutzung eines bestimmten Buches gesetzlich zulässig ist. Gehen Sie nicht davon aus, dass das Erscheinen eines Buchs in Google Buchsuche bedeutet, dass es in jeder Form und überall auf der Welt verwendet werden kann. Eine Urheberrechtsverletzung kann schwerwiegende Folgen haben.

Über Google Buchsuche

Das Ziel von Google besteht darin, die weltweiten Informationen zu organisieren und allgemein nutzbar und zugänglich zu machen. Google Buchsuche hilft Lesern dabei, die Bücher dieser Welt zu entdecken, und unterstützt Autoren und Verleger dabei, neue Zielgruppen zu erreichen. Den gesamten Buchtext können Sie im Internet unter `http://books.google.com` durchsuchen.

This is a reproduction of a library book that was digitized by Google as part of an ongoing effort to preserve the information in books and make it universally accessible.

Google™ books

https://books.google.com

THE JOHN CRERAR LIBRARY CHICAGO

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

THE
JOHN CRERAR
LIBRARY

The Process Photogram

EDITORS:
H. Snowden Ward.
Catharine Weed Ward.
George E. Brown, F.I.C.

VOLUME XI.
1904.

LONDON:
DAWBARN & WARD, LTD., 6 FARRINGDON AVENUE, E.C.

Digitized by Google

	PAGE
Lantern Slides from Screen Negatives,	181
Leblanc's Etching Patent	155
Levi's Process (Archetype)	4
Light Filters, Dry *v.* Wet	145
,, Standardised Formulæ	89
Lineature of Half-tones	73
Lithography, Photo-	157
M'Indoe's Rotary Intaglio Patent	118
Magnesia, Removing	109
Make-ready by Dusting-on Process	154
Mirror Silvering	115
Moger, J. H., Articles by	117, 165
Mono-bromfluorescein	122
Moore Light, The	63
Mounting Half-tone Blocks	78
New Zealand, "Process" in	137
Newton, A. J., Papers by	73, 97
Nigrography, Paper for	68
Nitric Acid, Densities of	7
,, Handling	127, 144
Noake's Half-tone Patent	32
Orthochrom T.	96
Orthochromatism without Light Filter	122
Overlay, Alrevo	159
,, Arthur Cox	126
Overlays, Half-tone,	183
Perchloride, Dissolving	109
Petit's Half-tone Process	173
Photogravure on Textile Fabrics	129
,, Plates, Etching	141
,, ,, Wiping	64
Photo-lithography	157
Photo-sculpture	131
Pigment Papers, Sensitising for Tri-color	121
Pinaverdol	94
Plews, F. W., Article by	179
Poisoning by Bichromate	80, 176
Printing Exhibition	86
Process Monger	113, 128
,, Year Book	21, 43
Professional, Is Processman a	177
Reflections and Copying	175
Relief, Reproduction of	131
Resist, Metallic	182
Reversing Negatives	37
Routing Accessory	171
Royal Bromide Prints, Half-tones from	155
Schaum, Dr Karl, Paper by	168
Schulze Half-tone Screen	149
Screen Adjustment	171
,, for Dry Plate, Half-tone	58
Screens, Care of	114
,, for Half-tone	46
Secret Processes	113, 128
Standardised Formulæ for Light-filters	89
Stripping Negatives	16
Sunlight for Color Work	174
Sweating of Screen	189
Three-line Half-tone Screen	149
Transfer Methods applied to Half-tone	185
Tri-color Blocks, Printing in Sets	110
,, Carbon	117
,, Chaos	17, 38
,, and Collodion Emulsion	76
,, Collotype, Sensitisers for	93
,, Exhibition in Paris	101
,, Filters	97
,, ,, Functions of	24
,, ,, (Meister Lucius)	48
,, Negatives, Time-development of	127
,, Photo-lithography	179
,, Process, Albert's	143
Two-color Process	101
Tynemouth Exhibition of Process	5
Unemulsified Silver Bromide	168
Vacuum Tube Light	63
Valenta, E., Paper by	76
Wagner and Stange's Collotype Patent	30
Weighing Chemicals	73
Wet Collodion	139
Wet Negatives, Varnishing	62
Wood-blocks, Photographing on	95
Woodburytype without a Press	161
Zinc, Cleaning	63
,, Drawing direct on	99
,, Etching, Dirty	166
,, Half-tones, Etching	174

Supplements.

A Bowl of Flowers. By R. C. Davison. January.
Heart of Oak. February.
Portrait. By Adelaide Hanscom. March.
A Hard Bargain. By Harold Holcroft. April.
Sunshine in the Orchard. By Harold W. Lane. May.
The Hand of Man. By Alfred Stieglitz. May.
H. Snowden Ward. By Gertrude Kasebier. June.
A Fruit Boat, Venice. By Percy Lewis. June.
Lesbia. By Fredk. H. Evans. September.
The Sisters. By Miss Marian Silverston. September.
The Little Princes. By Whitworth Wallis. September.
Where Once the Garden Smiled. By J. M. Whitehead. October.
The Last Stand. By J. M. Whitehead. October.
Kelmscott Manor from the Thames. By Fredk. H. Evans. October.
Approach to Kelmscott Manor. By Fredk. H. Evans. November.
The Young Raphael. By A. Tauxe. December.
Girl Reading. By Guido Rey. December.

Digitized by Google

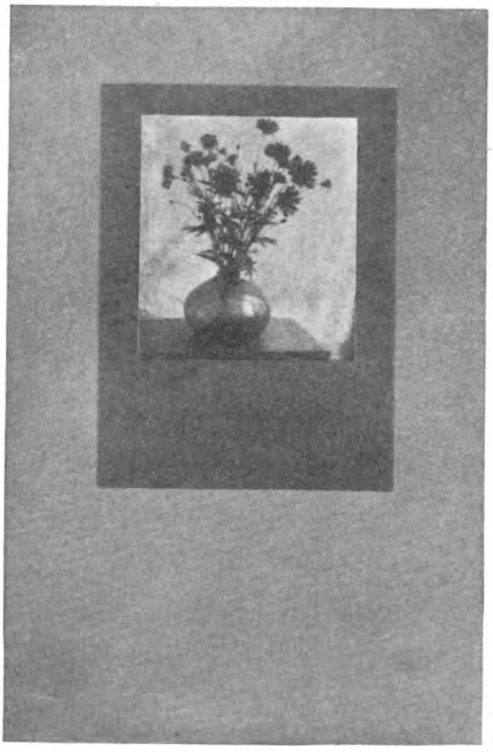
Digitized by Google

"A BOWL OF FLOWERS." By R. C. DAVISON.
No. 28 at the Salon, 1903.

MOUNTING THE EXHIBITION PRINT.

BY
FREDK. H. EVANS.

Examples for use in the first of twelve practical lessons to appear month by month in THE PHOTOGRAM *for 1904. The larger of the two reproductions is to be cut out and mounted as directed in Mr. Evans' notes. The mounts are provided by this month's covers and the inset of black paper.*



THE MOUNTING SCHEME.
See Article.

Digitized by Google

THE PHOTOGRAM

VOL. XI. JANUARY, 1904. No. 121.

Editors.
H. SNOWDEN WARD.
CATHARINE WEED WARD.
GEORGE E. BROWN, F.I.C.

COPYRIGHT.—*This Magazine as a whole, with its contents, both literary and pictorial, is copyright; and the copyright is registered in Great Britain and the countries forming the Copyright Convention. Our contemporaries are very welcome to quote from our pages (with acknowledgment), but we propose to protect ourselves and our advertisers against piracy.*

MOUNTING THE EXHIBITION PRINT

BY FREDK H. EVANS.

A series of twelve progressive lessons on the modern border mounting of prints. The prints to be mounted will be issued as supplements, and in most cases the actual mounts will be provided by the covers of the magazine. Each mounted picture should be kept.

WITH regard to the special style of mounting to be practically treated of in the succeeding months of *The Photogram*, I may preface these January notes by a few general remarks.

I am sometimes asked why I indulge in this variety of superimposed papers, and if I do not think a plain card would be far more easy of handling, and quite effective enough.

In reply to such criticisms I try to point out that this multiple style of mounting is but an easier method of the old style of surrounding a picture with a ruled and tinted border, or series of borders; and that its advantage over that method is the greater elasticity it affords in color treatment, while it gives an equal variety in effect by the various widths of margins. Mistakes and alterations are also more easily rectified; an elaborately ruled and tinted mount is a work of quite exceptional skill, and the least error with the ruling pen will spoil the whole mount.

A great disadvantage in the multiple mount is that the risk of damage by careless handling is so great; so few people know how to hold a mount without subjecting it to irreparable creases and breakages of the paper surfaces. When possible the bottom mount should be of stout card, so that the handling by incompetents is made approximately safe.

Another difficulty is that unless the mount is held quite accurately, all the fine border lines are not seen together, and so the general effect aimed at is greatly minimised.

If one could find room for storage, the ideal way would be for each multiple-mounted print to be framed *à la passe-partout*; it could then be handled with perfect immunity from damage, and the full effect of the borders and lines be had. Also the curious tendency of so many people to turn up, and count, and animadvert on, the number of papers used, would be nicely combated and foiled.

For exhibition purposes the *passe-partout* should be avoided, effective and cheap though it be; the danger of breaking of glasses when hanging is so extreme; a very narrow moulding stained to agree with the main tint of

Digitized by Google

the mount, or as otherwise found advisable, is both safer for the picture and more comfortable for the exhibition authorities to handle.

My views on the position of print on paper will be best shown in the examples given in the exercises to follow, during the coming year; but I would like again to inveigh against the common method, even amongst "art" people, and in art galleries, of placing the print with its centre in the exact centre of the mount; the result is the inevitable and to me most uncomfortable and distressing effect of the picture having "dropped"; the bottom margin *must* be greater than the sides and top, avoiding of course the exaggeration of it in vogue with some workers.

I think we may regard the multiple style of mounting as having "come to stay," as it affords an easy and exceedingly interesting way of effectively and sympathetically mounting one's pictures, where the ruled and tinted mount is by no means an equally practicable one.

Some sort of mount has to be adopted; we cannot risk our pictures being handled in a quite unmounted state; we cannot possibly frame them all; and if we could, the proper framing is vastly more difficult and costly. A restriction to one plain card, however suitable its tint may be, is quite too bald in effect to be tolerable to the artistic eye; and even if we in general restrict ourselves to two papers, we have thus far entered on the multiple mounting scheme, and shall presently find that three, or even four or more, papers will convey an added distinction to our print.

But on the whole we shall do best to restrict ourselves to as few papers as we find will convey a proper effect to our print; and manage as often as possible to get the bottom mount of enough substance to stand the unkind handling one's friends will persist in risking our hardly-won mounts by.

Remembering always that the golden rule in all mounting is that its only legitimate effect should be to enhance the beauty of the picture, to force that on the critic's attention; if we find him attracted first and most by the mounting, we may be sure it is wrong somewhere; it should only be realised after the picture has had its fullest meed of attention and praise. If otherwise, it must be discarded, remodelled, simplified, or in some way made secondary to the picture; it is its complement, and its influence must be a felt one, not an observed or pronounced one.

This Month's Exercise.

Print:—"A Bowl of Flowers," by R. C. Davison (Supplement). Mounting Papers:—Lindenmeyr's "Ruskin Napoli A.F." (this month's covers), and Lindenmeyr's "Matt Ruskin Special Black," presented as an inset this month.

In commencing this series of practical examples in the interesting art of mounting the photographic print, the editor has usefully suggested that the simplest of multiple mounts would be the most suitable, and this—besides its own charm of both subject and treatment—has led to the choice of Mr. R. C. Davison's "A Bowl of Flowers." The base, the mount proper, is to be made from one of the covers of this month's issue; the black paper on which the print has to be first mounted will be found given as an inset in this number. The picture has first to be very carefully and accurately cut out from the page on which it appears, and then stuck on to a piece of the black paper, by a touch of paste at the two top corners. This amount of adhesive is sufficient; if it is attempted to paste it down all over, the cockling will be extreme, especially when more than one sort of paper is used, as in later issues we shall attempt, and the whole beauty of the mount would be thus destroyed. The dimensions of the margins on Mr. Davison's original mount are as follows, and as these could not be bettered for proportional value, we shall carry them out in this attempt at reproduction, viz., $\frac{5}{16}$ in.

Digitized by Google

WILL YOU HAVE ONE? By Mrs. L. G. Hetley.

Second Prize in "Outdoor Portraiture" Competition.

The negative, Mrs. Hetley writes, was taken in a half-plate Adams' Reflex camera, with a Ross-Zeiss lens, on a Paget XXX plate. The print is on Wellington S.C.P. paper.

at top, $\frac{7}{16}$ at sides, and $1\frac{3}{8}$ at bottom. When this is duly placed on the brown Napoli mount, the dimensions of its margins will be:—1 in. at top, $1\frac{1}{8}$ at sides, and $2\frac{3}{4}$ at foot.

It should be noted that a perfectly dead black paper has been selected for the inner border. A shiny and light-reflecting paper fills the eye with an effect beyond that which the black color was chosen for, and largely destroys the effect of the black itself. This dead black paper is also of a sufficiently thin substance, and when more than one paper is used it is important to get all as far as possible in the thinnest makes, especially with this black, as it is usually used only to show as fine lines.

In a number of instances sufficient paper for the month's exercise will be provided by the covers of the magazine, but in other cases the print itself would have had to be reproduced on a very small scale for this to be done, and hence it will be necessary for the reader to cut the bottom mount from a sheet of the selected paper obtained by himself. For this reason it may be well at the outset to name here the papers which will be used. These are:—Ruskin Napoli A.F.; Melton Mordore; Court Grey; Nut Brown; Stone; Granite; Genova; and Ruskin Milano A.F., the papers in all cases being those of Henry Lindenmeyr & Sons, 11 B, Upper Thames Street, London, E.C.

Digitized by Google

Improving the Negative.

by Clarence Ponting.

In this age of photography, when all and sundry practise what, for want of a better name, is termed "pictorial photography," the number of "pure" photographers are in the minority, and therefore a short chat on a few of the methods (not new, perhaps) unknown to many, by which the negative can be improved to produce the final picture, may prove interesting and instructive. Not a very long time ago, people held up their hands in pious horror at the idea of this improving or "faking," as they termed it. They held that a photographic picture must be untouched either by hand on the print or by the greater crime of handwork on the negative, and such things as suppression of detail, holding back a certain portion of the negative during the process of printing, and introducing clouds, were never thought of, till some photographer more venturesome than his brethren actually dared to "print in" a sky. Well, I suppose this was the thin end of the wedge, for we have "faking" nowadays which in some cases makes us wish that we were back at the original stage when wet plates were used.

FIG. 1.—From the negative as taken.

It is only fair to say to those inclined to improve their work, that unless they have had some "artistic" training, or are naturally artistically inclined, they would do well

Digitized by Google

to leave this subject alone till they have studied the works of the well known painters, and, better still, the many reproductions of the work of acknowledged artists in the photographic world, which may be found in the press of to-day, with constructive criticism, which is the greatest help to the novice.

Personally, I think that a photographer who has not a grain of originality or "artisticness" (if I may coin a word) in his body, can train his faculties to such an extent, by study and patient examination of the various pictures which come before him, that in a short time he is on the high-road to success as a pictorial photographer.

All this may be said to be away from the point, but it really is not the slightest use to attempt to turn out pictures (I speak of them in the true sense of the word, and not as it is generally used) unless one possesses the knowledge of how and why to take a certain subject. Again, unless one has the eye to see—or has trained the eye to see would perhaps be better—how can one pick out the bits which go to make a picture? Then again, should one try one's hand at figure work, one must possess a knowledge of posing and lighting the figure, etc.

That the eye must be trained is a fact which very few photographers realise, and I must be excused for pressing the point so strongly. Now, to turn to the more practical side of the subject.

There are several ways of improving the negative, and also several ways of improving the print taken from a negative so improved, both of which subjects I intend to touch on here, and by the aid of illustrations from negatives before and after "improving," I hope to show the advantages gained pictorially. Mind, I don't care a "brass button" what the purists say with regard to "faking." I'm confirmed in it, and nothing that they can bring forward can shake my faith in it.

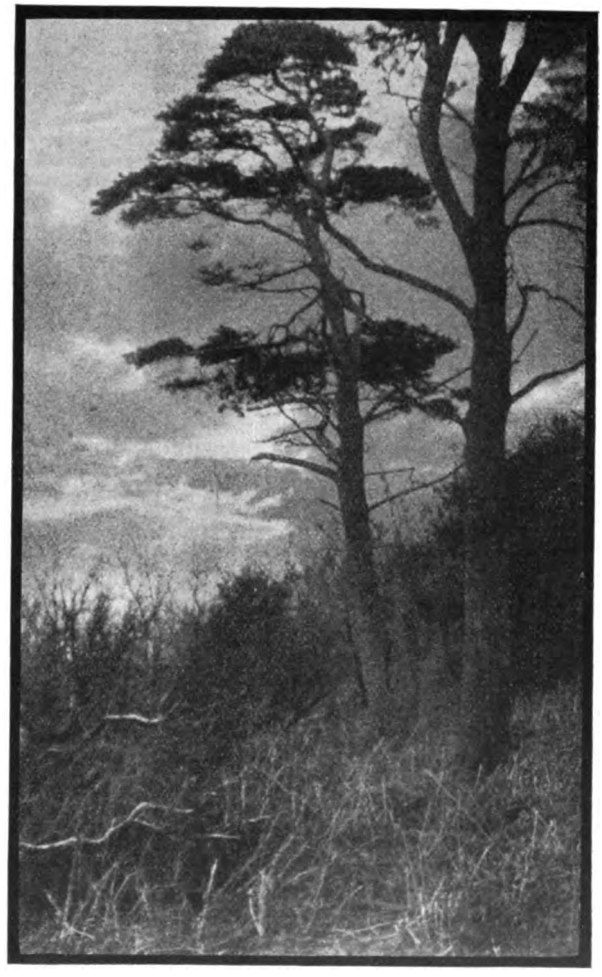


FIG. 2.—"GUARDIANS OF THE VALE."
Showing the advantage of an added sky.

Digitized by Google

It may not be truthful photography, but that it does improve, and in many cases make the picture, very few will deny.

Now, in my opinion, the simplest and most useful form of improving a photographic landscape is the introduction of clouds. Some of my readers may know, and some may not, how to "wed" a cloud negative to the landscape; but as this subject is so often dealt with in the photographic press, I need hardly touch on it here, but to convince some, I show an example of a print from a negative before and after printing in a sky (figs. 1 and 2).

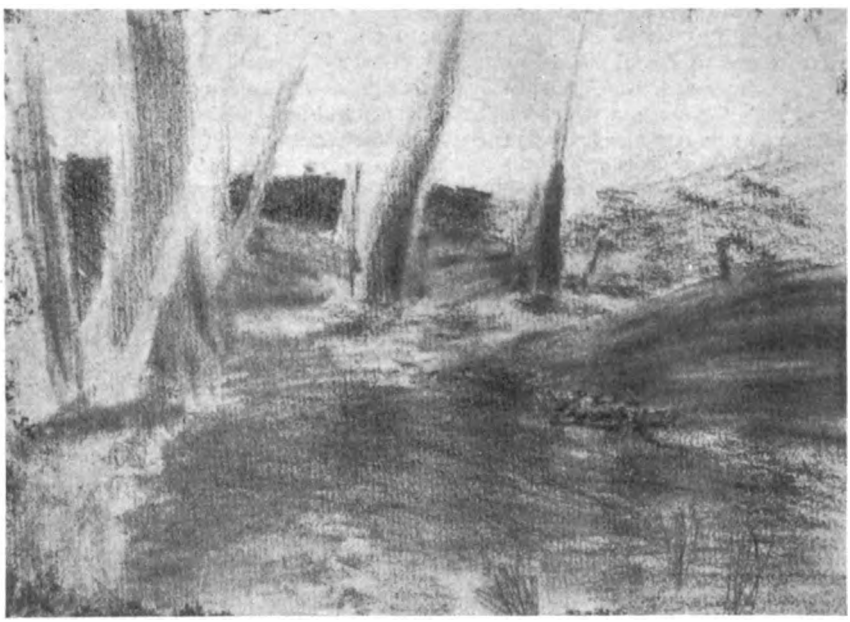


FIG. 5.—The paper back of the negative of figs. 3 and 4.

Fig. 1 shows a print from a negative, the only retouching being on the tree trunks to correspond with the cloud it was intended to introduce.

This appeared to want a good sunset sky to complete it. The sky negative having been taken (six months after), was fitted to the landscape by the simple process of keeping the horizon line shaded by a focussing cloth whilst using the cloud negative, which was a very thin one. This gives a rather striking effect for only the addition of a sky.

The next, and perhaps most often used aid, is that in which tracing paper is used in conjunction with stump or pencil on the glass side of the negative. It is undoubtedly the finest means of improving a negative (in competent hands, be it said). This method is to run a thin border of seccotine or aqua glue round and on the glass side of the negative. Whilst this is still moist, a piece of tracing paper slightly larger than the negative is damped, and laid, while still wet, on the glass side of the negative. When the paper has dried it will be found to be as tight as a drumhead and quite easy to work upon. Details can be suppressed at will, parts of the negative kept back which might otherwise print too darkly; in fact, almost anything can be done with it. But let the beginner beware of doing too much. An example is given showing the tracing paper with the retouching, and a print before and after

Digitized by Google

FIG. 3.—**From the untreated negative.**

FIG. 4.—" WILD GARLIC."

The back of the negative covered with papier minéral and worked up as shown in fig 3.

Digitized by Google

the handwork. In some cases it is absolutely necessary to make a fresh negative. I have before me an old figure study which had a very harsh lighting, the result being chalky hands and high-lights. Now, to make a printable negative of this, a transparency was made by contact on a backed plate. This was then developed, and when dry, had the glass side covered with tracing paper. On this the high-lights were toned down by pencil, and a fresh negative made by contact also on a backed plate. This, in turn, was covered by tracing paper and worked on with stump and pencil, with the result that the high-lights were considerably lowered in tone.

Then there is the method of dabbing paint on the glass side of the negative. This is best done by dabbing the part which requires it lightly with the "painty" tip of the little finger till the part is covered with a thin even coating. Then take a print and see if the desired effect has been produced. If not, let the part dry, and give another coat. Yellow oil color I find best for this purpose, for when damp it can be removed if not correct, and then, when the desired effect is produced, may be allowed to dry, for it will not rub off as the water color does.

Some workers use a knife to reduce the high-lights of a negative, but I must say I find it much safer to make a transparency, and to then work on the lights from the back. I have known cases where workers have objected to the longer time required to take a print from a tracing paper backed negative (although it takes only about one half as long again as an ordinary negative without tracing paper), and have had a somewhat original way of overcoming the difficulty. They varnished the negative on the glass side, and worked on this. Matt varnish was not used, but only the ordinary variety, the result of which was not so good as the tracing paper method, but overcame the difficulty of time required to print. Personally, I don't like it, but give it for those who care to experiment. Matt varnish is another method of working on the back of the negative, but I have found that it does not take the pencil so readily, nor does it allow such a quantity of retouching as the tracing paper. Workers who favor this method may say that it has the advantage of being readily removed from parts of the negative which are too dense. That this is the case I will not deny, but tracing paper can be made translucent by dabbing the part with vaseline and warming gradually before a fire; so this advantage is very small. Now, let us turn to the illustrations, on which I should like to give a word or two of explanation, and to show what particular method of "improving" was used in each case.

Figs. 3 and 4 show a landscape which was taken on an ortho plate with a screen, increasing exposure ten times. The exposure given was twenty seconds at *f*/8, but resulted in a very much under-exposed plate. Notice here the detailless trees which are clear glass on the negative. The film side was lightly smeared with retouching medium, and "bark" roughly sketched in. But this was not all that was required. The whole scene looked dull and lifeless, and seemed to want sunshine introduced. Nothing could be easier. Coat the glass side with tracing paper, and draw some "sunshine" on it. Take a print and see if satisfactory; if not, draw some more until you get the desired effect. The appearance of the tracing paper side can be seen from fig. 5, showing pencil and stump work.

Fig. 8 shows another example which was made the same way as figs. 1 and 2, the only difference being that the water was shaded down to correspond with the lighting from the sky after the sky was printed in. Fig. 6 shows the "straight" print, before "improving," and fig. 7, the cloud used.

Digitized by Google

FIG. 6.—The straight print from the negative.

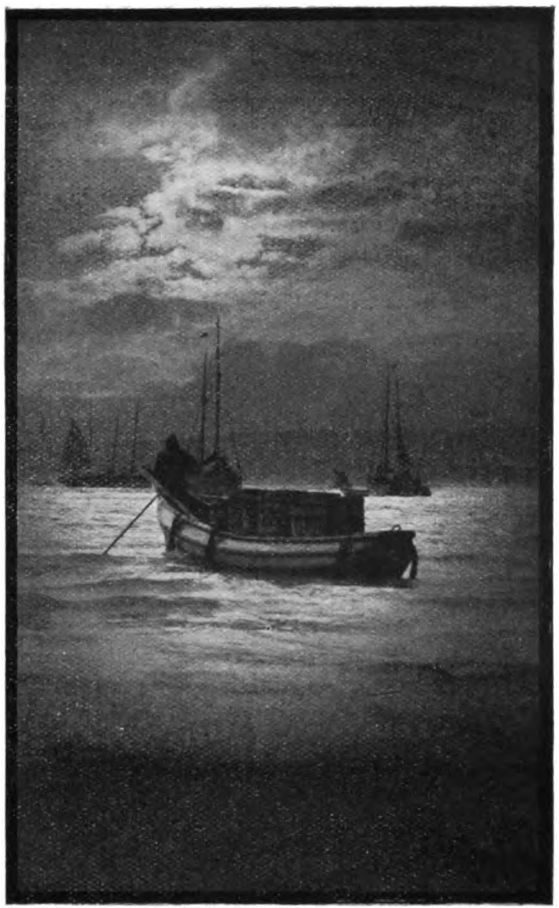


FIG. 8.—"THE RETURN OF THE FISHING BOAT."
The product of figs. 6 and 7.

FIG. 7.—The added sky.

Illustrations to "Improving the Negative," by Clarence Ponting. Article on previous pages.

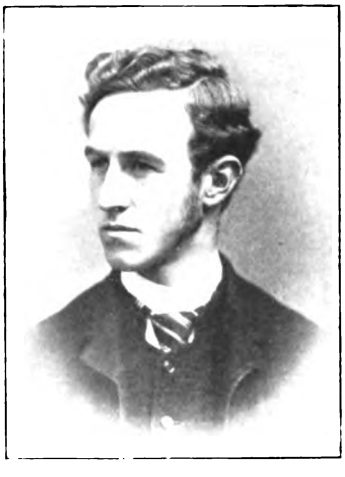
Digitized by Google

THE PORTRAIT AND THE STUDIO

The first of a series of articles by H. Snowden Ward on the methods of the greatest professional photographers. The following review of the progress of portraiture—to be completed next month—prefaces the succeeding chapters, which will deal with certain leading British and American studios.

It has been taken for granted that professional photographers are steeped in conventionality. Writers and critics have generally assumed it, readers of papers at photographic societies' meetings have often stated it, and the professionals themselves (with few exceptions) have been content to plead guilty to the impeachment. They have slowly withdrawn themselves from the exhibitions, and have admitted that they only make "the usual thing"; yet there are several men in London, some in the

By W. Scott, Ilkley.



By C. H. Braithwaite, Leeds.

PROFESSIONAL PHOTOGRAPHY OF TWENTY YEARS AGO.

provinces, quite a number in Edinburgh and Glasgow, one or two in Ireland, and many in the United States, whose tricks of the studio are modern and individual to themselves; whose conventions are of their own making.

The very conditions of professional photography force the successful man to repeat the few mannerisms which are appreciated: and the necessity for planning the business in such a way that most of the work may be done by assistants leads to much cramping. Some have revolted against these conditions, and taken up what Milton Waide of New York calls the "one-man" method. Of these I may write in later issues, but at present I wish to take a survey of the ordinary professional field in the English-speaking world.

Let me begin with a couple of old-fashioned portraits, made just about twenty years ago. They both look somewhat commonplace, to-day, yet each

Digitized by Google

of them, in its time, was the subject of study and marked a certain amount of progress. They were made in a time and a district when and where hard white faces were in fashion; and it is well to remember that there are still sitters who object to any shadow, because they say "I washed my face before I came, and I want to see it white." The portrait by W. Scott is a specimen of good provincial work of its period. At that time large heads were generally charged "extra" on the price-lists, and full-length or three-quarter length was the vogue. This picture was the result of a good deal of care in posing and lighting, by a man who was so up-to-date that he made an annual trip (not so common then as now) to London or Paris, to pick up the latest wrinkles. C. H. Braithwaite, who made the second example, was one of the progressive men of his time, one of the first who insisted on moving the sitter rather than the blinds, and who liked to use a narrow shaft of light rather than the general flood which was then very common. Even in this respect he was only one of many who anticipated some of the schemes of lighting which we are apt to hail as modern novelties. The heavy shadows were introduced purposely, to give strength.

An early example of the dark background. By the Albany Art Union, U.S.A.

The next two examples (p. 12) belong to some ten years later—to 1893, and are by a typical British and a typical American provincial photographer, Charles H. Evans of Swansea, and E. S. Sterry of Albany, N.Y. They belong to a time when the background, and its relation to the figure, was having a great deal of consideration, and in both these cases the arrangement was held to be very happy.

The two remaining examples of two years later (1895) illustrate the further development of the background. The M'Michael example shows a "plastic" or "alto-relievo" background, an exaggerated imitation of a pebble-dashed wall, which became a fashion and had a great vogue on both sides of the Atlantic. Like many other fashions, there was something to justify it. For some portraits the irregular light-and-shade of the plaster surface made a suitable, indefinite setting, and it had at least the advantage over the ordinary background that its details change with every change of

Digitized by Google

lighting. In the hands of a careful man it gave many different effects, and probably it would have been in use to this day but that its very success made it a "craze" for the time, and hence completely unpopular when once the craze died down. The Albany Art Union portrait shows another development of background convention, the success of which was largely due to Pirie M'Donald, then of Albany, now of New York; then a photographer

By Chas. H. Evans, Swansea.

By E. S. Sterry, Albany, N.Y.

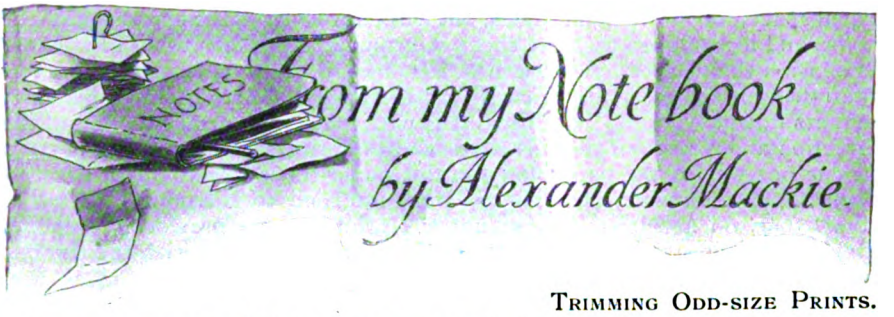
of fair dames, now—"Photographer of MEN." Of Mr. M'Donald I must say more, anon. The black-background portrait, with lighting concentrated upon the face, and often with Egyptian vignetting to cut away the lower part, owed much of its early popularity to its success in Mr. M'Donald's hands at the National Conventions, although I believe it was freely used by the Albany Art Union and one or two other American photographers quite as early as by Mr. M'Donald, and before his great exhibition successes. It is interesting to compare this Art Union portrait with the one by E. S. Sterry, for Mr. Sterry was identical with the Art Union, and changed the name of his business some time between these two portraits of 1893 and 1895.

THE PLASTIC BACKGROUND.
By M'Michael, Buffalo, N.Y.

Next month I hope to bring this little collection of portraits up to date, and in succeeding chapters to deal with certain changes in studio methods. Brief descriptions of some of the most modern studios, with notes on the present methods of operating therein, will be given; and short chats with the proprietors — as Martin Jacolette on diffusion of focus, H. Walter Barnett on the reasons for, and increase of, convention, Elliott on "at home" portraiture, Richard Speaight on how to pose children; and others.

(To be continued.)

Digitized by Google



Trimming Odd-size Prints.

Systematised as it is in business establishments, the trimming of prints, even of unusual dimensions, presents no difficulty. It is simply a matter of using appliances provided for the purpose, but those who only occasionally have to trim a print that cannot be dealt with by using the ordinary cutting shape or trimming board are apt to find more difficulty in making a satisfactory job of it than might be anticipated, especially if it is required, not only to cut the print itself to size, but to provide "tints" of slightly greater dimensions for its support on the mounting board. To cut ovals and circles naturally requires special apparatus, but the rectangle, the ordinary shape of a print, requires but the simplest of mechanical aid. It is rather a matter of how to set to work about it. A rectangle, as Euclid tells us, has its opposite sides parallel, and its angles right angles; and if the opposite sides be parallel and one of its angles a right angle, the other angles will also be right angles (Euclid again). It is on this fact the following method is based:—First trim the base line of the print, then the top, making the lines parallel by measurement. A perpendicular is then to be set off at one end of the base line, drawing it in pencil, by means of a set square, or, at a pinch, using a sheet of notepaper, which is always sufficiently accurately cut. A negative plate should not be used without testing its rectangularity beforehand. After trimming the one end, the other is to be made parallel to it by measurement as in the first instance. There is far less likelihood of error when the parallelism of the opposite sides is assured (as it can be by simple measurement) than when an attempt is made to trim each corner successively to a right angle, when, if the set square does not happen to be accurate, or the slightest mistake made in its use, the result is very badly "out."

The Stretching of Wetted Prints.

When a print is mounted wet, the mount on drying curls in one particular direction. It may cockle or twist as well, but there is always a distinct curl. This arises from the fact that when paper is wetted it expands, and on drying tries to return to its original dimensions. Being prevented by its adhesion to the mounting board, it pulls the board over in the direction of the contraction, hence the curl. The expansion of paper, however, only takes place to an appreciable extent in one direction—that is, in the width of the original sheet, or in the case of paper made in continuous length, in the width of the roll, and in that direction the expansion may be far greater than most would surmise. An ordinary bromide print trimmed while dry to 12 by 10 in., experimentally tested, was found to measure after one minute's soaking in water $12\frac{7}{16}$ by $10\frac{1}{16}$ in. In trimming a print that is to be mounted wet this expansion should be allowed for. If, for instance, a 12 by 10 portrait taken in the usual way to form an upright picture is to be mounted on an ordinary commercial plate-sunk mount having a tint 14 by 12, if it be trimmed with the intention of leaving an

Digitized by Google

equal space, top, bottom, and sides, but without regard to the expansion of the print, and if it happen that the sheet of bromide paper be cut with its longer dimension the width way of the roll, the margin at the sides will be greater than that top and bottom, which is extremely ugly. In the home making of mounts in which "tints" are used, it is particularly important to regard the direction and stretch of the tint paper and the print. If the print happen to be cut one way of the paper and the tint paper the other, it might possibly occur, if, say, a quarter-inch margin were intended to surround a 12 by 10 print, that, on attempting to mount the print on this previously prepared mount, the print would be found to coincide in dimensions with the tint one way, leaving a half-inch margin the other.

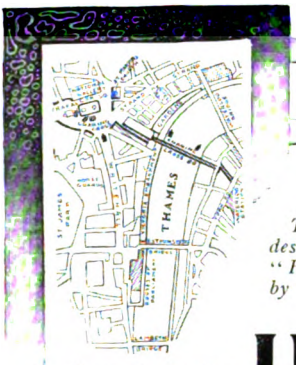
Lime Deposits on Negatives.

In the use of some of the modern developing agents, particularly if a carbonate be employed as the alkali, there is a great tendency for a deposit of a calcareous nature to form on the plate. This has its origin in the water used in the mixing of the solutions or in the washing. It is rather difficult to trace the exact course of its formation, and particularly why it should occur, as it sometimes does, in blotches and smears, or why it should show up finger marks. In making a lantern slide the deposit, even when it is a general one, would be noticed at once in its degrading the brilliancy and transparency of the parts that should be approximately clear glass; but one is apt to overlook it in a negative, because the slight degradation is easily attributable to other natural causes. This lime deposit is of a nature that is easily decomposed by an acid, hence if an acid fixing bath be used it does not occur; but when an acid fixing bath is not used, a very simple remedy exists in using a weak acid bath after fixing. After removal from the fixing bath, the negative should be fairly well washed, then immersed in an acid bath—a dram of hydrochloric acid to 5 oz. of water answers well—for a few seconds only, as the deposit is merely a surface one, and again washed. The effect will be a distinct gain in brilliancy to the negative and the removal of the dull ground-glass effect. Needless to say, an acid bath should not be used on a negative direct from the fixing bath.

A Common Defect in Lenses.

It has been pointed out recently that a large proportion of the cheap rapid rectilinear lenses now so extensively used have a defect that the photographer inexperienced in lens matters would have some difficulty in discovering, although he might from time to time notice its effect on his negatives. It arises from the fact that owing to an amount of uncorrected spherical aberration the lens has actually a longer focus when used with a small stop than when used at the full aperture. In practice the effect is that, when, say, a landscape subject is focussed with the full aperture and a stop is inserted to bring the planes both before and behind into definition, the plane of actual focus is removed further away, and in the negative the distance is abnormally sharp, and the foreground probably not sufficiently defined. In practice, in using such a lens, when its peculiarity is recognised it is not a difficult matter to make the necessary allowance by focussing an object nearer the camera than that which in the ordinary way would be chosen, or where the light permits, when a still smaller stop is to be used, to focus with *f*/16. The difference between that and smaller apertures is not appreciable. In copying, when, of course, the camera requires more than the normal extension for the focus of the lens, perhaps the only practical way of using the lens is to focus with the stop to be used or as near that to be used for the exposure as possible. It is not generally known that the best opticians generally correct their lenses so that the maximum of their working qualities is attained with the use of the *f*/16 stop.

Digitized by Google



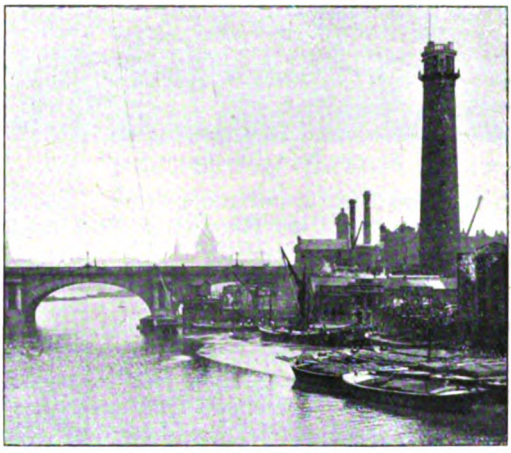
The route, showing points of view.

SIX-PLATE PROMENADES.

Brief walks, among places of interest, planned to economise time and secure the most favorable lighting.

The series here commences with six walks in London, arranged, described and illustrated by G. H. Springall. This month's is "From Waterloo to Charing Cross," to be followed in February by "Along the Embankment." With practical notes each month.

How frequently the townsman complains of his lack of photographic opportunity, but how many Londoners have exposed half a dozen plates in Westminster Abbey? how many have taken their camera to Trafalgar Square? along the Victoria Embankment, or to the City? Every day these unfortunate photographic brethren pass by some of the finest views and buildings in the world, and, as they go by them, grumble because the district is devoid of photographic interest. A few walks will now be indicated and suitable subjects noted. The exposures will be arranged so that each subject will be correctly lighted as it is met with. Though at first sight this planning may seem troublesome, it saves much more time than it costs. The exposure for each subject will be given; and for this information to be of any use, the plates and developer must be stated.



Exposure No. 1.—The Shot Tower.

Exposure No. 2.—Cecil and Savoy Hotels.

B. J. Edward's backed "snap-shot iso" plates were used throughout. It is always advantageous to use backed plates, and those of the color-corrected type often save the distance where an ordinary plate would lose it by over-exposure. This is especially useful for town work, where the distance, even on a fine day, is generally cloaked in a blue haze.

The developer was B. J. Edward's pyro-soda, with one slight modification, potass metabisulphite being used instead of sodium

Digitized by Google

metabisulphite. A. Pyro, 1 oz.; potass metabisulphite, 1 oz.; water, 80 oz. B. Soda carbonate, 12 oz.; soda sulphite, 4 oz.; water, 80 oz. Equal parts of A and B used. A quarter grain of bromide to the complete ounce of developer was used, except in the special cases mentioned later. A twenty-fifth of a second at *f*/16 was the exposure taken as a basis, this being given for the usual open subject in a good light. All modifications were made from this standard. It was found that the "twenty-fifth" is about one-fifteenth, and the "fiftieth" about one-sixtieth in the particular shutter used on this occasion.

Exposure No. 3.—The National Gallery.

Waterloo Station was the starting point in each of the walks outlined. Starting from this point about 10 a.m. and walking up Sutton Street to Charing Cross Bridge, the scene of the first exposure is soon reached. From the first recess in the bridge, a glance towards the southern end of Waterloo Bridge shows that an exposure can profitably be made, the well known "Shot Tower" being a prominent feature of the picture. The standard exposure, $\frac{1}{25}$ sec. at *f*/16 was given. An iso plate on a clear day will just save St. Paul's in the distance.

As the northern end of the bridge is reached, the embankment, with the Cecil and Savoy Hotels, makes the second subject. The lighting of these buildings on a clear day is beautiful. $\frac{1}{25}$ sec. at *f*/16 was again found to be a very correct exposure.

From this point to the southern side of Trafalgar Square is but a few minutes' walk. Here two exposures can be made. The first was found only to include one of the fountains when the National Gallery was the important feature of the picture; a second exposure was therefore made to include both of the fountains, the Gallery being sacrified to give central place to St. Martin's Church. In order to keep the life in the water, $\frac{1}{100}$ of a second was the exposure given in each case, the lens being opened out to *f*/8.

The sun is shining from the south about mid-day, hence the light is directly behind the operator if the camera is directed towards the Square from Parliament Street. From the second refuge a fairly satisfactory result was obtained. The chief difficulty in this type of exposure lies in releasing the shutter at precisely the correct moment. A trifle too soon, and an empty foreground results, reminding one more of "London during the Plague" than a city on a busy day. On the other hand, just too late, and a blurred image of a horse's head, out of focus, fills the plate. The tyro may help himself considerably by watching the screen until the traffic fills the foreground satisfactorily; now quickly look round the camera and see how far the nearest vehicle is away. Insert the slide and all is ready. Wait till the traffic is arranged somewhat as before, and expose when the nearest vehicle is at the distance previously arranged. Do not hurry; the foreground will fill up if patience is exercised. For such an exposure as this the faster the shutter the better. $\frac{1}{100}$ sec. at *f*/8 was used in this instance,

Digitized by Google

but a focal-plane exposure would have been better.

Having made this exposure, the Duke of York's steps may easily be reached *via* Cockspur Street. This exposure was suggested by an illustration in that excellent little book on lenses lately published by Messrs. Beck. A cross lighting is always to be desired, and at 12 mid-day the illumination is good. There is no danger of the sun shining into the lens, as the wall on the right allows the camera to be held in shadow. The Clock Tower is obviously an important feature, and every effort must be made to keep the negative thin enough to allow it to print through. $\frac{1}{100}$ sec. at $f/8$ was the exposure given, and an iso screen multiplying the standard exposure by three was used. A diluted developer kept the negative thin, and the hands of the clock are plainly visible in the print.

Exposure No. 4.—St. Martin's Church.

Exposure No. 5.—From Parliament Street.

This, the sixth exposure, completes the morning's work, and allowing time for taking the greatest care, the whole should not occupy more than two hours. Had a haphazard wandering been substituted for the planned walk, much more time would probably have been occupied, and fewer negatives obtained.

Many excellent exposures have been passed by unnoticed. It is hoped that they will be diligently sought out, and in view of a future excursion, entered in a notebook. Opposite each note should be placed the most suitable time for photographing the subject. Those who carry a changing box or magazine and twelve plates can easily double the number of exposures without extending the journey.

And now, the last word: develop the plates at once in order that any mistakes or accidents may be put right on a subsequent journey.

Exposure No. 6.—Westminster from the Duke of York's Steps.

Digitized by Google

"A BASIN OF SOUP." By W. Thomas.

Illustrating the article "Gaslight Paper for Enlargements." Reproduced from a 10 × 8 enlargement.

Digitized by Google

GASLIGHT PAPER FOR ENLARGEMENTS

BY W. THOMAS

When Velox, the first "gaslight" paper, appeared on the English market, it instantly created a favorable impression among professional and amateur photographers, there being a clearness in the high-lights, a richness and transparency in deep shadow, with a purity of color. The black being so true a carbon black (without the least muddiness or rusty tinge even in heavily-shaded portions) in relation to developing papers, it seemed to at once take a position equivalent to that of Artigue among carbon and similar printing processes. There is the same velvety appearance in the shadows, and the same cool high-lights in both.

Very shortly after "Velox" was marketed a special brand of it was produced, expressly made to render softly modelled prints possible when using harsh, strong negatives, both brands being made and intended for contact printing.

Doubtless now that long winter nights are with us, this and similar brands of slow contact paper will be largely employed for print making, and it may interest a large number of workers to know that the special "portrait" variety of this paper is sufficiently sensitive to render it not only useful for contact printing, but for the making of enlarged pictures from small negatives direct by means of either daylight as the illuminant or even by means of artificial light used in the ordinary optical enlarging lantern.

This fact appears to be very little known. Indeed it was brought to the notice of the writer only recently by a very well known and eminent King's Counsel who had been using it for making enlargements by daylight. The idea suggested itself that if the paper was sufficiently sensitive for use in a fixed enlarging box with a lens stopped down to a very small aperture, then it must be equally available for enlarging by means of artificial light and a lens working at a fairly large aperture.

Two illustrations to this note represent the first trial exposures made to test this matter. The particulars regarding them are as follows:—The paper used was the remains of a packet opened eleven months ago. The negative of the old lady tasting her soup was one that had been well exposed and softly developed, density not having been allowed to go too far.

The lantern used for making the enlargement is one fitted with incandescent gas and a condenser, the lens employed for projection being that with which the original negative had been taken, a Dallmeyer Stigmatic working at *f*/4·5 and specially intended for hand-camera work.

The quarter-plate negative having been placed in the lantern and the light turned up, the enlarging easel was placed at such distance as showed the quarter-plate enlarged to 10 × 8 in. When ready, the first piece of "Velox" paper was placed in position and a guess exposure given of ten minutes. While this was proceeding, a developer of rodinal, one in thirty, was mixed with half a grain of bromide to the eight ounces of developer.

On completion of the exposure the print was developed straight away without any preliminary soaking in water; it came up steadily, and in about

Digitized by Google

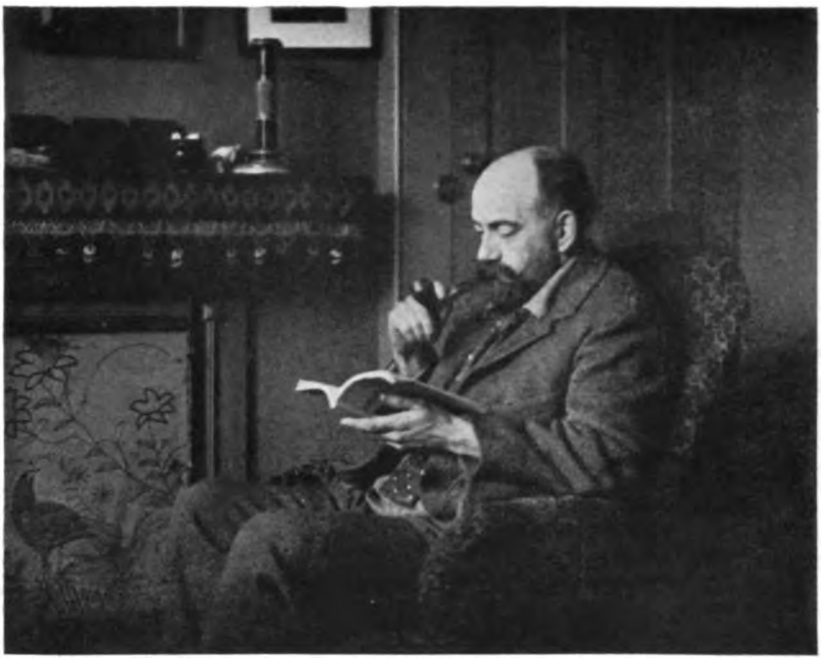


Illustration No. 2.

the normal time had attained full detail and density, and was ready for the fixing bath. That first rough trial print is the one reproduced.

With regard to the second illustration the same particulars as to length of exposure and developer apply, but the negative was one that had been made as one of a series of rough trials in testing some lenses and plates.

It was neither so fully exposed nor harmonious a negative as the first, and seeing the amount of almost clear glass representing deep shadow, and the fact that the contrast was more marked, it appeared a suitable test to use, to find how long it was possible to carry development when attempting to coax detail out in the brightly lit parts, and at the same time without losing the rich black color in the shaded portions and getting instead of it the bronzed, rusty appearance so often produced when work is done under these conditions on many of these development papers.

In this respect there is nothing to choose between the prints—the black in one being as good and pure as in the other, although in the second instance, that of the reading subject, development was continued until all action had ceased and no further detail could by ordinary means be coaxed out of the unbroken white spaces represented by face and forehead.

If an image be projected by means of a portrait lens which would cover the original plate, or that portion of it it is required to enlarge, and work, as many portrait lenses do, at an aperture of $f/2$ or $f/3$, then the exposures will be correspondingly reduced, and to any possessing a lantern fitted with some form of artificial light and a condenser, this paper or any other of a similar character will be found quite within the range of possibility to use for the making of enlarged prints without any serious protraction of the exposure, while the results themselves obtained will possess all the good qualities of this class of paper.

Digitized by Google

STUDY OF A CHILD. By Frank R. Hedges.

First prize in "Outdoor Portraiture" Competition.

From a negative on an Imperial Special Rapid plate (backed). Exposure, 1-30th of a second with Cooke lens at f/8. The reproduction is from a print in brown carbon.

Digitized by Google

OUTDOOR PORTRAITURE.

Competition No. 12.

1st prize (£1 1s.), "Reflex" (Frank R. Hedges, Bury St. Edmunds). 2nd prize (10s. 6d.), "Would you like one?" (Mrs. L. J. Hetley, Norwood, S.E.). Honorable mention: "Garnock" (Wm. Fotheringham, Saltcoats); "Jane Austen" (Arthur Marshall, A.R.I.B.A., Nottingham); "Auntie" (Miss Agnes B. Warburg, London); "Dalurne" (J. C. Warburg, London); "Luna" (John Beeby, New York, U.S.A.); "Deronicum" (L. A. Edmonds, Menston-in-Wharfedale); "Bubble" (Rev. H. R. Campion, Ely); "X" (Rev. Henry W. Dick, Manchester); "Black Cat" (Miss Sybil Aird, Eastbourne); "Thelma" (Harry Bowen, Stoke-on-Trent).

OUTDOOR portraiture at once pleasing and pictorial is none too easy, and when we asked for it in the last of the series of competitions which now ends, we were not hopeful of great things. But in bulk the competition has proved one of the largest, and in pictorial interest one of the best. The wording of the competition, suggesting, as it did, something more than a stereotyped portrait, induced some reader to fly to figure study, and even to landscape with figures, pure and simple. Of these the more ambitious suggest many thoughts as to photography's limitations.

It has been difficult to make the awards, but probably the majority will share our opinion of the "Study of a Child," reproduced on page 21. It is a simple idea well carried out. The surroundings are made subsidiary to the figure, which is so treated as still to be a portrait.

The second award is more open to question. True, it is "outdoor portraiture," if so only by the dimension of a brick. It is a portrait, and the first effect of it awakens pleasure. The whole scheme, despite the ugly window frame, is picturesque. Its defects are the unfortunate darkness in tone of the flower which the girl extends, and, secondly, the too transient character of the pose. An attitude which is part of an action can rarely be chosen for portraiture purposes. If all our friends were pictured in such "arrested poses," the album or portfolio would have all the terrors of the cinematograph.

THE SERIES PRIZE AWARD.

The completed scoring in the 1903 competitions leaves the leading contestants as follows:—Rev. Henry W. Dick, 17; J. C. Warburg, 13; Arthur Marshall, A.R.I.B.A., 12; J. Scott, 10; Niels Fischer, 6; A. Percy Brown, 4; Clarence Ponting, 4; and Frank R. Hedges, 4. The Series prize of £5 5s. thus goes to Mr. Dick, who, it will interest other competitors to know, is the Vicar of a slum parish—St. Luke's, in Manchester—and the President of the Manchester Amateur Photographic Society. Mr. Dick is a versatile photographer with a strong *penchant* towards the pictorial. One of his articles of belief is carbon as the finest and simplest of processes. The "Series" prize will be offered in this year's competitions.

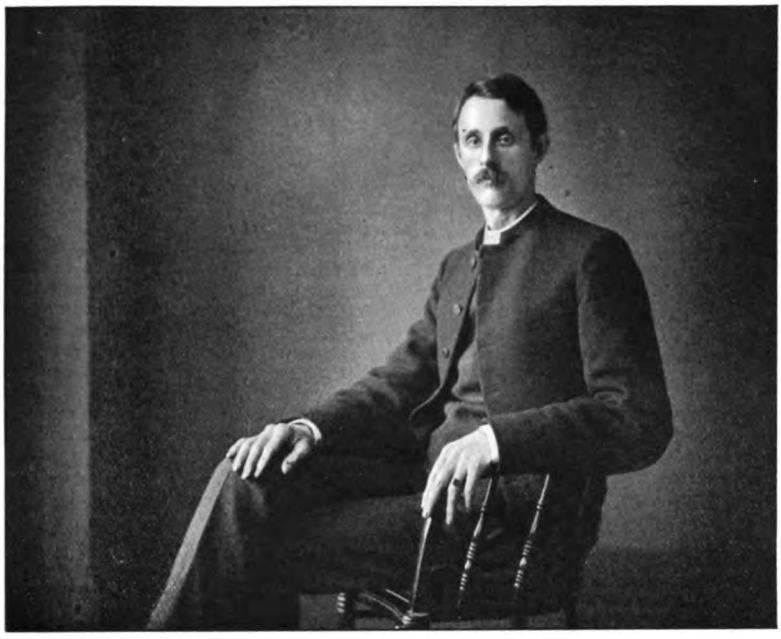
TO WOULD-BE PRIZE-WINNERS.

The full list of forthcoming competitions appears on another page among the advertisements. Will our good friends kindly observe the few very simple rules there printed, as also some other unwritten ones? Many people seem to prefer to make it as difficult as possible to get at their prints. Wrapping after wrapping, each tied with string! They forget the time required to get through a few hundred of such parcels. The man who sends his print *rolled* is the worst offender, but he seals his own fate, for the chances of the print reaching the judges in one piece are extremely small. The ideal competitor packs his prints flat between a pair of thin cardboards, wraps them in one wrapping of stout brown paper, and ties them with string, never pasting or sealing the package. On the envelope he writes his *nom de plume* and the number of his prints, if more than one are to be returned. One *nom de plume* can be used for any number of prints.

On January 1st the results for the first competition should reach us—sets of three prints most suitable for a picture post card of the standard size of $3\frac{1}{2} \times 5\frac{1}{2}$. The novelty and interest of the prints will be considered, as well as their pictorial qualities. The second competition is for the most useful formula, table, or concise collection of facts not in *Figures, Facts and Formulæ*, 3rd edition. Contributions which do not receive a prize but are reserved for publication in a fourth edition of *Figures, Facts*, will be paid for.

Notes on "Stripping Negatives," on the "Hewitt Mercury-Vapor Lamp," and on "Bathed Lantern Plates for Tri-color Work," appear in *The Process Photogram* this month, among other topics of photo-mechanical interest.

Digitized by Google



Rev. Henry W. Dick, who wins the £5 5s. series prize in the competitions now concluded. The portrait is by T. Longworth Cooper of the Manchester A.P.S.

"THE PHOTOGRAM" OFFICE.

To the new features which appear in the present number will be added others in the course of the next few months. Notes on picture post cards are to be a regular constituent of our contents month by month, and brief contributions on any of the points where photography touches the post-card cult will be eagerly considered.

Mr. Evans' scheme of instruction in the effective mounting of prints is a part of this year's programme which every one of our readers should carefully follow. Practice teaches more than precept, and the series of notes will direct the worker's practice in a manner which must educate him in this part of his work more effectually than hours of abstract study. The mounting papers recommended by Mr. Evans are the result of arduous search and much experiment by him. The list printed on another page gives the names of tints and textures best suited, not only to the twelve lessons to be set in *The Photogram* this year, but for general work in the border-mounting of prints.

An apology must be mixed with these promises and counsels. The series of chapters announced some months ago, on a simplified form of collotype, has, perforce, been held out of *The Photogram* by the claims of other subjects wider, if less important, in their interest. We are glad to say, however, that the articles commence in the current number of *The Process Photogram*, the special photo-mechanical issue of *The Photogram*, for which many people are privileged to pay the sum of sixpence monthly. The collotype articles, minutely explaining as they do every stage in the printing of impressions in comparatively large numbers, are of quite special importance to publishers of post cards in a small way on their own account, a class of our readers who, we hope, will turn to the "process" section of the magazine.

Of the other directions in which *The Photogram* intends to serve its readers during the present year we have no space to speak, but a booklet which describes some of our schemes in becoming detail has been prepared, and may be had by any person who applies for it either to his dealer or to the Editors at Effingham House, Arundel Street, London, W.C.

Digitized by Google

PICTURE POST-CARDS

An amateur's hotel expenses were met by his sales of picture post-cards of the locality, taken and printed during his stay. So says "The Barnet Photographic Record."

A unique picture card is just coming on to the market in the shape of Adelina Patti's portrait. The *prima donna* has held aloof from the photographers even more absolutely than a well known lady novelist.

Thirty thousand "Rotox" cards of local views issued in the course of a season at a profit of £4 per 1,000, is the report of a small professional, J. Peat Millar, in *The Bromide Monthly*, which ever interesting little journal, we are glad to note, is keeping its readers alive to the profit in post-card photography.

The Book-Post Card introduced by the Rotary Co. has puzzled a good many people with the inscription on its back: "For halfpenny postage, sender's name and address only allowed here. Signature on picture side." One part of the explanation is, that being less than the statutory size of a post card, anything in the nature of a message converts the card into a *letter*, demanding a penny stamp. The other part is that a large proportion of these cards are enclosed with letters to actors and actresses begging that they may be signed and returned through the post. The last phrase in the Rotary Company's inscription is to denote that when thus embellished (the G.P.O. would say "defaced") by the actor's autograph on the picture side, the card will still travel for the modest halfpenny. Many actors make a charge for these favors to unknown admirers, and Mr. Arthur Bourchier is one of those who devote the proceeds to the Actors' Benevolent Fund.

A Book-Post Card of the Rotary Company. Slightly reduced.

With fiscalitis as the prevailing epidemic, it is curious to recollect that one of the first picture post cards to circulate largely in this country had a strong fiscal flavor about it. It was "The Little Englander," a grotesque figure on a little bun-like island in the middle of the sea. The creature, looking abject in the extreme, was bereft of all except his "breeks." The card was produced by a reader of *The Photogram*, Mr. F. T. Corkett, a pioneer of "postcardery" in England, and now director of this immense branch of Messrs. Raphael Tuck's business. Mr. Corkett is a photographer, process-man and printer, has worked his way from printer's devil in a country jobbing office to his present position. When Mr. Corkett started with Messrs. Raphael Tuck & Sons, they purchased the copyrights and negatives of his Leicester business, so that many of the photograms on Messrs. Tuck's cards have been taken personally by Mr. Corkett, among the latest being the series of the Alhambra "Carmen" ballet.

Will the post card turn out the Christmas card? is a question which interests the public as much as it does the stationer and post-card maker. To be assured that the post card specially designed for Xmas presentation, will give no reason for the recipient to attribute its selection to motives of economy, one has only to visit one of the large stationery houses. The variety and elegance of Xmas post cards are surprising, considering what a short step the trade has yet taken. With a view to obtain an authoritative utterance on the question, a *Photogram* representative waited on Messrs. Raphael Tuck, the classic Xmas card firm, and also probably the largest producers of pictorial postal cards. Messrs. Tuck were emphatic in the view that the Xmas card is preserving its old time

Digitized by Google

favor. The Xmas pictorial card, they find, is creating a fresh and large field of business, and with a thousand varieties of this form of greeting cards to work from, they find a difficulty in satisfying the demands of the public. People, it would seem, who have not hitherto sent cards are doing so now that their labor is reduced to writing the address upon it, and others are supplementing the classic card with the postal variety.

What's What

Developing P.O.P. — To *La Revue de Photographie* M. H. Reeb contributes some very practical notes on the development of plain paper or gelatine P.O.P., a topic of special importance in the dark days of winter. The method gives great control over the contrast and color of the prints. A weak developer gives softness, a strong one vigor. Thus, for a hard negative we must expose for a longer time and bring up the partly printed image on a weak bath. A flat negative we print very lightly and develop in an energetic solution.

With longer exposure (and short development) the tones tend to red; with short exposure (and prolonged development), to dark green or black.

The yellowish stain occurring on the backs of certain papers seems to arise in some way from the sizing of the paper.

Gallic acid is an excellent developer, as it does not reduce unexposed silver chloride even when alkaline. It is a purely "physical" developer. A solution (A) is made in water *plus* alcohol—the acid dissolves with difficulty in the former alone—260 gr. in a mixture of 90 per cent. alcohol 5 oz. and water 5 oz. The acid is first dissolved in the spirit and the water added. For normal good negatives one part of this stock solution is mixed with ten parts of water.

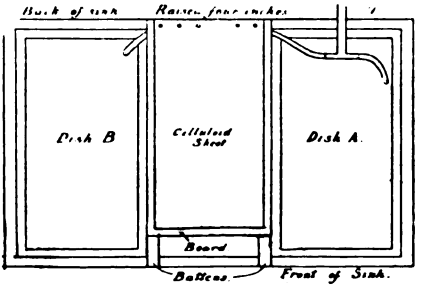
It is well to use an accelerator with the acid, for which any neutral organic salt can serve. Acetate of soda tends to black and dark green tones; Rochelle salt, potass oxalate, etc., to sepia tones. Ten per cent. solutions of these salts are made and used with the above (A) solution. For black tones (short exposure):—(A), 1 part; 10 per cent. sodium acetate solution, 1 part; water, 10 parts. For sepia tones (longer exposure):—(A), 1 part; 10 per cent. Rochelle salt solution, 1 part; water, 10 parts. An acid also modifies the color of the prints, retarding development. A colloid (gum, fish glue or gelatine) prevents the bath becoming turbid and muddy in use. A good formula on these lines is as follows:—Gallic acid (A) solution, 1 part; 10 per cent. sodium acetate solution, 1 part; "acid-gelatine" solution, 1 part; and water, 2 parts. The "acid-gelatine" solution is made by dissolving gelatine (1 part) in a warm mixture of acetic acid (1 part), alcohol (1 part) and water (100 parts). The developer can be used several times over.

Pyro is an excellent developer for red tones. A stock solution (B) is made:—Pyro, 150 gr.; glacial acetic acid, 150 minims; 90 per cent. alcohol, 3½ oz.; water, 3½ oz. One part of this stock solution is mixed with 25 parts of water. The tone of the prints is chestnut brown or red. In the combined toning bath it becomes violet, unlike the gallic acid tones, which scarcely alter in the combined bath.

In fixing, great care must be taken to guard against acidity of the hypo bath. The developed print should be well rinsed and placed in acid sulphite of soda solution [or in soda sulphite solution.—EDS.] for a minute or two, again rinsed for a moment, and fixed in 15 per cent. hypo.

Washing Prints.—The method which follows is one I have constantly used for very many years, and was in use in the studio where I received my first photographic lessons. As the system is so thoroughly efficient and speedy, I have never adopted any other.

A "two-way" connector is fitted to the tap and two lengths of rubber tubing attached. At each end of the sink is a large wood, glass-bottomed dish about three inches deep, into which water is conveyed by means of the tubing. Across the centre of the sink, facing the operator, is placed a length of stout board faced with fine ground glass. The board is screwed to two strong battens which rest upon the top edges of the sink. The end farthest from the operator is raised about four inches, the near end dropping level with edge of sink and two inches from the side, thus allowing the water to drain into sink and not over on to the floor. Along the top edge is fastened a sheet of celluloid (I used thin patent leather for a long time) slightly smaller than the board.

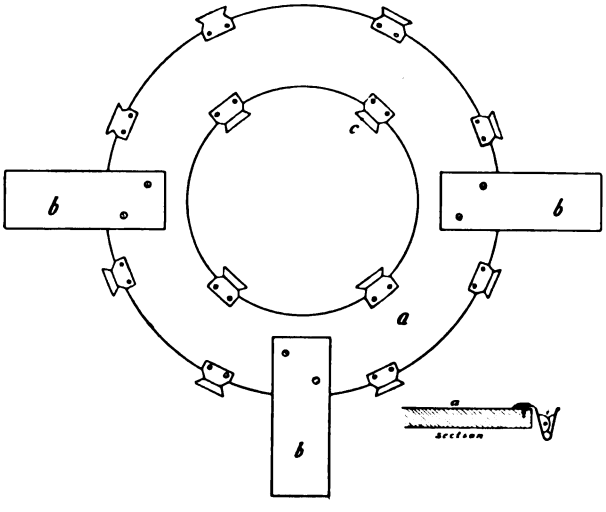


Digitized by Google

The prints, as they are fixed, are placed in dish A, and given a good watering for ten minutes. As many as the board will carry singly are then laid under the celluloid sheet, and a ten inch flat squeegee passed over from top to bottom with considerable pressure two or three times. The sheet is now turned back and the prints transferred to dish B. After all the prints from dish A have been passed, they are given a watering in dish B, and returned *viâ* the squeegee board to dish A.

Treated thus from six to eight times, the prints will be as thoroughly freed of hypo as it is possible to make them. The squeegeeing must be hard and thorough, and after removing prints from the board, the latter must be given a good swill down with water from one of the rubber tubes before placing the next lot in position. Don't try to save time by placing the prints two or three deep, but have a board large enough to carry a dozen cabinets *singly*, and see the edges do not overlap. The flat edge squeegee will be found superior to the roller variety.—E.M.

The following apparatus will be found convenient for washing prints and films, and t has the advantage that the prints are not bruised or damaged in any way, which is often the case with the ordinary print washers, where the prints revolve in the water.



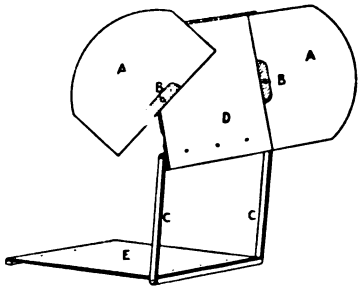
It consists of two parts —a rack for suspending the prints, and an ordinary plate-washing tank with siphon.

The rack consists of a flat wooden ring (*a*) carrying three projecting wooden lugs (*b*) and twelve clips (*c*).

The prints are fixed in the clips, and the rack is placed over the washing tank, so that the lugs (*b*) rest on the sides of the tank and support the whole. The tank is then left under a tap in the ordinary way, as when washing plates.

Another advantage of this method is, that the rack, with the prints attached, can be lifted off bodily and placed on another tank for fixing, etc., without handling the prints themselves.

The sizes for twelve ¼-plate prints should be as follows:—Diameter of wooden ring, outside 4¾ in.; inside, 2¾ in. The lugs should project about 1¼ in. from the outside of the ring. The tank used should be the size for 7 × 5 plates, as the longest side of the prints will hang vertically downwards, and will then be just clear of the bottom. Ordinary brass tie clips are suitable for the clips, and they should be fastened on with brass screws, as shown in the sectional sketch.—F. H. Hutton.



When spotting prints by artificial light with the lamp in front, it is advisable to use some kind of shade, to protect the eyes. The one shown in the figure has an advantage over a round shade as it does not darken the room, but only shades the strong light from the eyes, and can be moved to any desired height. The two flaps A A revolve on the screws B B. The one on the near side is moved partly round in the figure to show the support C, which is screwed to D, and the stand E, on which the lamp is placed. When not in use it can be packed flat. The flaps A A revolve on to D, which folds underneath E, the flaps being outside.—A. W. H. Weston.

Notes on Chemicals.—*Silver thiosulphates* (of importance from their formation during the fixation of plates or paper). $Ag_2S_2O_3$ is a very unstable substance formed when much silver nitrate or other salt reacts with little thiosulphate ("hypo"). It is white when first formed, but darkens almost immediately, forming silver sulphide. It forms the most reliable test for traces of hypo. To 2 drachms of the wash water in a test-tube add a few drops of 1 per cent. silver nitrate solution. Milkiness, due to chlorides,

Digitized by Google

will at once appear, and then, if hypo is present, a brown coloration, which is best observed by holding the test-tube against white paper.

$Ag_2S_2O_3{\cdot}Na_2S_2O_3$ is an almost insoluble double salt produced when silver nitrate solution is added to hypo solution until a permanent precipitate results. This is the salt first formed when fixing plates or paper, and if the hypo bath is weak or exhausted or used too short a time, the almost insoluble compound may not all be converted into :— $Ag_2S_2O_3{\cdot}2Na_2S_2O_3$, which is soluble in water. Any left will decompose, in time, giving rise to stains. Moral—fresh, full strength hypo for all fixing purposes.

Silver acetate, $AgC_2H_3O_2$.—Forms white needle-shaped crystals on mixing silver nitrate and acetate solutions. Soluble in cold water to 1 per cent. Sensitive to light.

Silver bichromate, $Ag_2Cr_2O_7$.—Dark red precipitate formed on adding silver nitrate to bichromate solutions. Used in P.O.P. emulsions to give a paper printing brilliantly from flat negatives.

Silver carbonate, Ag_2CO_3.—A light yellow flocculent precipitate formed on adding carbonate to silver nitrate. Sensitive to light, and decomposed by heat.

Silver chromate, Ag_2CrO_4.—Red precipitate formed on adding strong silver nitrate solution to dilute potass bichromate. Insoluble in water ; soluble in alkaline chromates and in ammonia.

Silver citrate, $Ag_3C_6H_5O_7$.—White precipitate on adding alkaline citrate to silver nitrate solution. Soluble in ammonia. Sensitive to light.

Silver cyanide, AgCN.—Curdy precipitate obtained by adding silver nitrate solution drop by drop to potassium cyanide solution. Sensitive to light. Dissolves in potass cyanide, forming $AgCN{\cdot}KCN$. This solution applied to a plate bleached with mercury forms a deposit of silver and mercuric cyanide (soluble).

Silver fluoride, AgF.—Crystalline. Soluble in water. Insensitive to light.

Silver oxalate, $Ag_2C_2O_4$.—Crystalline precipitate (needles) formed on adding oxalic acid to silver nitrate solution. Almost insoluble in water ; soluble in ammonia.

Silver phosphate, Ag_3PO_4.—A yellow precipitate formed from silver nitrate and sodium phosphate. Soluble in ammonia and in ammonium carbonate. Darkens in the light. Used by Dr. Meyer in the form of an emulsion for printing papers.

Silver tartrate, $Ag_2C_4H_4O_6$.—As white curdy precipitate on mixing cold silver nitrate and tartrate solution : if the silver nitrate solution is hot, as glittering plates. Sensitive to light ; decomposed on boiling. Soluble in ammonia. GEORGE E. BROWN.

"Wild Nature's Ways." By R. Kearton (London : Cassell ; 10s. 6d.).—A handsome gift-book of bird and insect life, illustrated in some two hundred instances by Mr. Kearton's camera. The chapter, "Deceiving Wild Animals," takes the reader into the confidence of the photographer-naturalist, and we learn of the property ox, the dummy sheep, and the other artificial lurking places wherein Mr. Kearton crouches, his camera so well concealed that he can use it within a foot or two from the skylark on her nest. Sometimes Mr. Kearton covers his head with a mask made out of an ash-stub, a disguise so little suspected by a bullfinch, that he perched himself on it to dry after his morning bath. The book is full of information pleasantly related, and not a doubt need be felt of its acceptance as a Xmas present by a child or grown-up.

Photography and Crime.—In contrast with the camera as a society craze, are those many departments of applied photography which surely anchor the industry in the world's commerce. Perhaps the least known, but not the least important, of these is the elaborate system of methods by which the camera is pressed into the service of criminal investigation. Scotland Yard has its regular staff registering (photographically) the features of wandering undesirables, but a far wider view of the part played by the camera is unfolded by Dr. Reiss in a recent work, *La Photographie Judicaire* (Paris : Charles Mendel ; 16 fr.). Scenes of violence, telltale footprints, the gruesome bodies of the murdered, are recorded for the guidance of the police. With the microscope, blood-stains are identified and forgeries detected, in all of which the photographic plate is a more sensitive and accurate observer than the eye. Dr. Reiss' book is of working methods, but none the less as absorbing as many a novel. Its illustrations are not all pleasant to look at, but no worse than modern "bloodshed" fiction.

The volume is excellently produced, and fully illustrated (including four Velox supplements). It deserves to remain the standard work on the subject.

"Le Procédé Ozotype." By H. Quentin (Paris : Chas. Mendel).—The fact that in both Germany and France independent handbooks have been published bearing witness to the simplicity of working and the excellent results obtained by ozotype, is an illustration of its rapidly increasing popularity. M. Quentin seems to be especially struck with the great advantages it offers over the ordinary carbon process. His instructions are based on Mr. Manly's first publication of the process, and on the experiences of himself and M. Montpillard.

No mention is made, however, of the recent improvements in working by which the whole process can be performed in an hour. M. Quentin will say better things still of ozotype when he works it with the iron bath now recommended. The instructions given are very complete, though without any important modifications of the published

Digitized by Google

formulæ beyond the fact that in some cases the writer recommends sensitising the paper while the sizing is still wet, and warming the acid bath to 70° Fahrenheit in all cases. He concludes:—"With the materials at his disposal, without actinometer, without a reversed negative, without reticulation of the film, without transfer, the amateur can obtain pigment pictures absolutely permanent. It is the carbon process placed within his reach, but with the added advantage of ozotype's marvellous flexibility of control."

Books Received.—*The Photo-Miniature* (Dawbarn & Ward, Ltd.; 6d.). No. 52, dealing with ærial photography. An interesting *brochure* which records the methods of photography from balloons and kites.—*Catalogue of the Sunderland P. A. Exhibition.* T. Fitzgibbon-Forde, a local professional, secures a valuable advertisement in the shape of a page announcement facing a supplement on Wellington bromide paper from one of his own negatives, and prominently acknowledged to him.—*The Use of a Photometer in Photography.* By Dr. J. H. Smith. A reprint (in German) from the *Mitteilungen der Physikalischen Gesellschaft Zurich.*—The Annual Report of the Birmingham Society. Another prosperous year in Birmingham, we are glad to see. The membership has increased and the society's activity shows no signs of slackening. The latest admirable step is the engagement of Mr. John H. Gear to deliver a series of six lectures during the winter session.—*Syllabus and Exposure Note Book* of the Leeds Camera Club. On last year's excellent novel lines.—*The Members' Year Book* of the Southampton Camera Club, intelligently different from Leeds and equally good. There is a blank page for the summer programme to be issued in April as a gummed slip. The book acts as a permit to photograph in several places in the district.—*Manual Pratique de Platinotypie* (Paris: Chas. Mendel). A useful treatise on modern platinum work. As usual in foreign text books there is no mention of Packham's toning process, but other methods are given, and we are glad to see a note on the wisdom of keeping the uranium toner still while in action. Probably most workers continue to rock the dish from force of habit. The author's eulogy of platinotype omits any mention of the retention of iron by the paper which may lead to yellowing. *Wet Collodion.*—A brief manual (in French) by L'Abbé J. Ferret (Paris: Gautier Villars; 1 fr. 50).—*Year Book of Northumberland and Durham Federation,* Edited by H. Wallis Wardropper. Includes articles by north country authorities, details of the societies, and some pages of formulæ. —*Catalogue of the Hamburg Exhibition.* Numerous half-tone reproductions, including a number of designs for a photographic poster.—*Catalogue of the Third San Francisco Salon, 1903.*—*The South Australian Exhibition Catalogue.* Mr. David Blount alone represents Great Britain, and receives the gold medal for a figure study—"Innocence."

FORTHCOMING EXHIBITIONS AND COMPETITIONS.

Particulars of Exhibitions are given when first announced, and again when it is time for entries to close. Will secretaries who wish insertion please mention details below, and note that last day is 12th of each month for publication on 25th? The Editors will feel grateful for the Exhibition catalogue as soon as published.

En.=Entries. Pic.=Pictures. Ex.=Exhibition. G.=Gold Medals. S.=Silver Medals. B.=Bronze Medals. O.C.=Open Classes. Sec.=Secretary.

NOTICE TO EXHIBITORS.

On the suggestion of several readers, the Editors have arranged to send entry forms for the exhibitions or competitions announced month by month on receipt of TWO PENNY STAMPS. *Their omission to enclose any form or forms should be taken as an indication that at the time of despatch the printed matter was not published. It is hoped that exhibiting readers may find it convenient to obtain the entry forms of all current shows by a single application in this way.*

(1) *International Exhibition of Color Photography.*—En. and Pic., Jan. 15. Ex., Feb. 15 to March 15. No medals or charge for moderate wall space. Address, M. le Secrétaire du Comité d'Études photochromiques, 44 rue des Mathurins, Paris.

(2) *Burnley C.C.*—En., Jan. 14. Ex., Jan. 21 to 23. S. and B. plaques. G. and B. medals. 2 O.C. Sec., B. Slater, Wood Nook, Burnley.

(3) *Brechin P.A.*—En., Feb. 13. Pic., Feb. 27. Ex., March 5 to 12. 6 O.C. Bronze plaques. Sec., J. Kirk, 1 Infirmary Street, Brechin.

(4) *Liverpool A.P.S.* (lantern slides).—En., Jan. 30. Sec., E. Simmett, Percy Buildings, Eberle Street, Liverpool.

(5) *North-West London P.S.*—En., Jan. 28. Pic., Feb. 10. Ex., Feb. 11. 2 O.C. S. and B. Sec., J. S. Fairfoull, 13 Addison Road, Walthamstow.

(6) *Ilford.*—38 prizes for toned and untoned bromides and "gaslight" prints. Last day, Jan. 9. Ilford, Ltd., Ilford, E.

(7) "*Ensign*" *Film Competition.*—£100 in prizes. Particulars and coupons from George Houghton & Sons, Ltd., 88 and 89 High Holborn, W.C.

8) *Kodak.*—£1,000 in prizes for prints from Kodak plates and N.C. film.

(9) "*Rotox.*"—140 cash prizes for prints on Rotox. Rotary Photographic Co.

(10) *Marseilles Salon.*—En., Feb. 24. Pic., Mar. 2. Ex., Mar. 12 27. Sec., Dr. Castueil, 20 Cours du Chapitre, Marseilles.

Digitized by Google

Trade

Manufacturers sending apparatus for examination and notice should state distinctly whether, and when, they wish it returned.

NOTICE.

Copies of the notices in these columns reach the firms concerned on the day of publication (23rd December). Hence the mention of *The Photogram* for January when addressing enquiries will at once indicate the exact article in regard to which information is sought.

Catalogues, Price Lists, and Descriptive Pamphlets.—*The Charles Urban Trading Co., Ltd.*, 48 Rupert Street, London, W. Bioscope films and appliances.

J. Barnard & Son, London.—The "Velvotint" method of coloring prints.

R. R. Beard, 10 Trafalgar Road, Peckham, S.E.—All high-class lantern requisites.

J. H. Dallmeyer, Ltd., Newman Street, W.—A new edition of the "Adon" booklet, with some new illustrations.

Kodak, Ltd.—The "Kodak Winter Book," a tempting account of flashlight work, portraiture, and other branches of winter photography.

Hobbies, Ltd., 12 Paternoster Square, London, E.C.—Winter photographic requisites, — enlargers, lantern apparatus, with particulars of a weekly payment scheme of purchase.

Alf. Jones & Coleman, 144 Queen Street, Auckland, New Zealand.—A full list of European apparatus. Will our New Zealand readers kindly note Messrs. Jones & Coleman supply *The Photogram* and its publications?

John J. Griffin, Ltd. — Occasional trade circular, November issue. Dealers should ask Messrs. Griffin to place their names on the mailing list of this circular, which details the firm's latest introductions.

Newton & Co., 3 Fleet Street, E.C.—Leaflet of "Radium Screens" (4s. 6d. and upwards), permitting a demonstration of the properties of Dr. Ramsay's wonderful element. Latest list of lantern slides.

E. Merck, 16 Jewry Street, E.C.—A new list of chemicals, and the most complete we know. A new and welcome feature is the pricing per kilo and other metric measures as well as per lb. or oz. The catalogue is most valuable as a chemical reference book.

Apek Post Cards—gaslight, and self-toning P.O.P.—reach us from Mr. Wilfrid Emery, High Road, Cricklewood, N.W. The former has a smooth surface, the latter is matt and gives an agreeable warm brown tone on fixing.

Sensitised Xmas Post Cards.—Messrs. A. & M. Zimmermann, of 3 Lloyd's Avenue, London, E.C., send us post cards of the kinds mentioned last month, but with a new variety of designs in front. As before, these take the shape of suitable Xmas greetings.

For Printing Post Cards comes still another frame, this time from Mr. W. Tylar, 41 High Street, Aston, who indicates its special fitness for printing from portions only of the negative by the title "Anipart." The frame, which takes a quarter-plate negative, costs 1s.6d. in teak or 1s. in pine, the postage being 3d.

Christmas Post Cards are a new specialty with W. Mariott Dodson of Bettws-y-Coed, N. Wales. They are from photographic originals of winter scenes, in happy combination with decorative pen-and-ink work. The cards are issued in bright colors and should command a ready sale. Mr. Dobson will send trade terms to photographic dealers and stationers on application.

For tinting Prints and Lantern Slides convenient cabinets of liquid dyes are issued by Daniel Judson & Sons, Macks Road, Bermondsey, S.E. Six colors are included in the 1s. 6d. set, and twelve in a larger collection costing 5s. We find the tints extremely easy to use.

Ozotype.—Mr. Manly has laid users of ozotype under an obligation by issuing gratis from 1 Weedington Road, Kentish Town, N.W., a 20-page booklet, giving Baron von Hübl's views of the process as stated in the recent German work. The booklet usefully emphasises two points where the beginner in ozotype may go wrong.

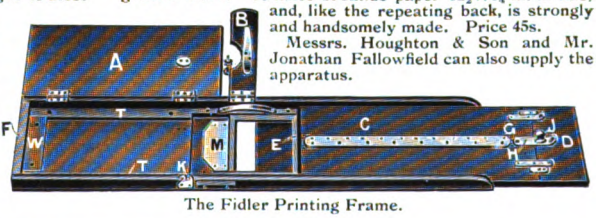
Sensitised Book-Post Cards.—It was to be expected that photographers would not allow the Rotary Photographic Co. to be the sole producers of the natty "book-post card" already mentioned in our post card notes, and illustrated this month on another page. The company are now acceding to the wishes of amateurs and professionals to have these cards in the sensitised state, and so we may now print in this dainty style at the cost of 6d. per dozen for the paper. The cards are sold as Rotox matt and glossy, and in the same varieties of Rotograph bromide. They are also obtainable in packets of 100 at 3s. 6d. or 1,000 (30s.).

"The Cinematograph for the Amateur" is the motto of the Tardeo Camera Co., 17 Shaftesbury Avenue, London, W., who issue a small but practical cinematograph camera, and an "animated album" in which the paper band of prints from the film negative is viewed. Mechanism in both camera and viewing instrument has been greatly simplified, so that the whole outfit costs only £10 10s. Short lengths of film can be used, and the cost of working the camera may be calculated on the basis of 4d. per foot for film, and 4d. per foot for developing and printing—for those who do not care to do this work themselves. The company offer the new apparatus to professionals for animated private portraiture, and will quote special terms to the professional. A prospectus of the Tardeo system is sent free.

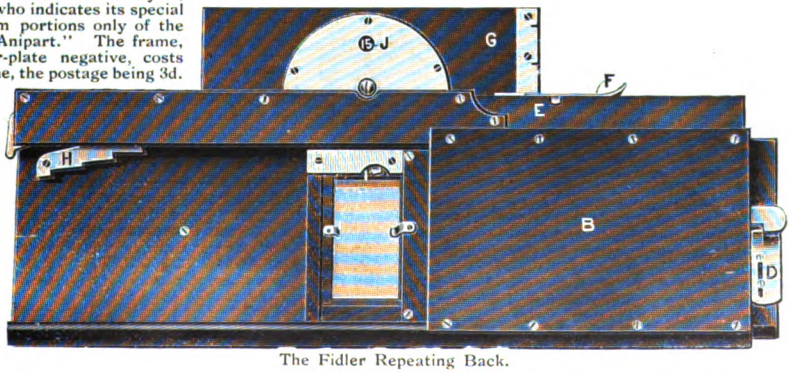
A Repeating Back and Printing Frame for the taking and making of several small pictures on a single quarter-plate are made by Marion & Co. (under Fidler's patent), and relieve the photographer of all trouble in the preparation of these small and popular prints. Fig. 1 shows the repeating back, which is adapted to any camera. Each time that the chamber carrying the plate is pushed into place for exposure, the plate is shifted into a new position whilst the number of exposures made is registered on a dial. The price of the No. 1 size, taking fifteen negatives on the quarter-plate, is £4: of No. 2, taking eight on two quarter-plates, £5.

The printing frame provides in a very ready yet simple manner for taking prints rapidly from the negatives, and while set for the dividing back could be used for other general work. It takes bromide paper 12½×4¼ in. in size, and, like the repeating back, is strongly and handsomely made. Price 45s.

Messrs. Houghton & Son and Mr. Jonathan Fallowfield can also supply the apparatus.



The Fidler Printing Frame.



The Fidler Repeating Back.

Digitized by Google

The Beard Gas Regulator has been reduced in price from 30s. to 21s. Complete with gauge, the regulator now costs £1 6s.

Metalline Prints.—A bromide paper giving the effect of a print on silver is made by the Electro and Photochemische Industrie, Bingen on Rhine. The *Rundschau* states its keeping properties as six months at least.

Lusterine is a sensitised fabric, printed in daylight and giving various pleasing tones on fixing only. The makers are the T. M. Rogers Company, 321 Morrison Street, Portland, Oregon, U.S.A.

Mounts.—Messrs. Houghton issue to certain of their customers a set of sample mounts each marked with the prices and the other sizes and styles in which it is obtainable. We should think the selection will be of service to many of our readers, whether semi-amateur or professional.

Edinol.—Messrs. the Bayer Co. write that "in order to meet the convenience of those who do not desire to purchase our products in the smallest packing hitherto sold, we have decided to sell edinol powder in ½-oz. bottles, acetone-sulphite powder in 1-oz. boxes, and acetone-sulphite conc. solution in 3-oz. bottles."

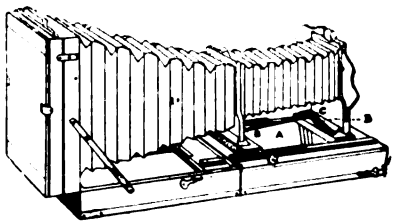
A Naturalist's Camera made by the Folmer & Schwing Co., 407 Broome Street, New York City, is specially arranged for photographing small objects on a large scale in the field. The camera is fixed vertically on the tripod, an extension of the base-board supporting the object. The price in America is 105 dollars, 8½×6½ size, with R.R. lens and shutter.

A tilting camera stand and copying easel is made by the same company, and is conveniently arranged for copying prints, or transparencies by transmitted light.

Exposing Enlargements.—An absurdly simple but excellent little device for giving greater certainty to the test exposure when making enlargements has been issued by Messrs. Griffin under the title "The Velox Exposure Gauge." It consists of four strips of translucent paper arranged to necessitate increased exposures in the ratios of 1½, 3, 6, and 9. The gauge, in its frame, is laid over the paper when exposure is being made, and a print in graduated exposures obtained at one single operation. The exposure actually given is divided by the number on the strip through which the best rendering of the negative is obtained, and the result is the correct exposure of the print. The Velox exposure guide may be had from dealers in Velox, to whom Messrs. Griffin are sending supplies.

The Ilford Rapid Isochrom Plates, mentioned last month, may now be reviewed in the light of our sensitometer and daylight tests of them. Their sensitiveness to yellow and green is very marked, but they are practically insensitive to red, and can therefore be worked in the light of a red filter such as that obtained by dyeing fixed, washed and dried gelatine plates in 4 per cent. solutions of eosin (blue shade) and tartrazin, and binding the two glasses film to film. In landscape they are thus well fitted for the correct rendering of colors, and possess the advantage over the Ilford Chromatic plate of at least double the sensitiveness. They are well coated with an emulsion rich in silver, and are extremely well packed. Each packet of four plates, after separation and wrapping in the well known Ilford manner, is again wrapped in two sheets of paraffined paper, and the box itself has an inside wrapper of the same paper. The new plate costs 1s. 3d. per dozen quarter-plates, and is an addition to the long series of Ilford materials of which Ilford, Ltd., has just reason to be proud.

Messrs. Griffin's Enlargers.—To the A series of enlargers briefly reviewed in this column last month, Messrs. Griffin have added another which, with the B series introduced by them last season, provides their public with a choice of apparatus suited to widely different demands in the matters of price and performance. For beginners in enlarging methods the A outfit at 12s. 6d., complete with bromide paper and developer, is a wonderful little instrument. The new C series appeals to those past the initial steps, as it provides for small or great enlargement and thus permits small portions of a negative to be given presentable size, a frequently advisable course. And this it does with all the facility which has brought the fixed-focus enlarger into such favor. By a simple attachment the enlargement is kept automatically in focus as the scale of magnification is altered. Messrs. Griffin have found a solution of this oft-discussed problem, which is commercially practicable and quite satisfactory in working—if we may speak from a brief experience of it. The C instrument enlarges from ¼ to a maximum of 10×8, and carries the sensitive bromide paper in a dark slide. The negative carrier is a good feature, as it can be thrown out of square and any lines not "straight on the plate" corrected in the enlargement. An extra carrier takes a lantern plate, and the apparatus thus serves well for making slides by reduction, the dark slides being adapted for the reception of the negatives. Like its predecessors, the enlarger is portable, and like them also it is inexpensive. The instrument



before us, handsomely made, costs 50s. All our readers ought to get the booklet "Enlarging at Home with Inexpensive Apparatus," which Messrs. Griffin send from Sardinia Street, London, W.C.

New Aldis Lenses.—Messrs. Aldis Bros., of 13 Old Grange Road, Sparkhill, Birmingham, are issuing a series of Aldis lenses of the same general construction as used in the *f*/6 Series II., but specially designed and corrected for affording a greater covering power, with slightly reduced rapidity, for those workers who do not find much use for the excessive brilliance and rapidity of the *f* 6 series. In this Series III. is a lens (the No. 7) which, while it goes into the ordinary 5×4 Unicum shutter, will cover at full aperture, *f*/7·7, a half-plate, and forms a compact and useful instrument for the hand-camera worker.

This series comprises the following foci:—

No.	5	6	7	8	9
Focus	5″	6″	7½″	9″	11″

Plate covered at full aperture, quart. 5×4 half. 5×5 ¼

The cells of the No. 7 are so arranged as to screw directly into the Unicum shutter as fitted by Messrs. Aldis, with a special adapter for the Nos. 1 and 2 Series II. lenses, and consequently all those who have the rapid lenses, either quarter-plate or 5×4 size, can, at a very slight expense, procure the advantage of a much larger covering power with a very slight loss of rapidity. The field of the half-plate lens (No. 7 of the series) examined by us is anastigmatic at its full aperture, *f* 7·7, over an angle of 20°, that is to say, a 5×4 plate is covered by it right up to the extreme corners. Beyond this angle astigmatism showed itself and became decided at 25°, corresponding to a disc of 7 in. diameter. In other words, on a half-plate the astigmatism commences to impair the image half an inch from the narrow ends of the plate. Considering the low price at which the lens is sold, £3 3s. in half-plate size with Unicum shutter, this is a remarkable performance. The perfection of the more expensive instruments of Messrs. Aldis and other makers is not expected, but the series is notable in providing the photographer with a lens which gives anastigmatic definition over a fair angle and yet does not cost him more than a cheap R.R. lens. In Iris mount the half-plate lens costs £1 18s.

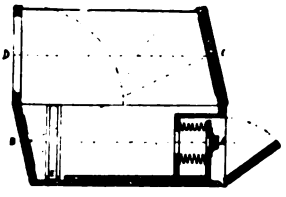
Two Notable Iso Plates.—Messrs. Wratten & Wainwright of Croydon, oldest of plate makers, have at length added two color-sensitive brands to their well known and esteemed series of "London" plates. "Allochrome" and "Verichrome" are their names. The former is a plate of moderate rapidity. Messrs. Wratten mark it 50 H. & D., and we should say it is about one sixth the speed of the "Verichrome," which is a plate of the very highest rapidity. In color-sensitiveness the "Allochrome" gives a spectrum band into the green on moderate exposure: on longer exposure its sensitiveness extends up to the yellow D line of sodium, a degree of color-sensitiveness which is amply sufficient for ordinary work. Messrs. Wratten state that the Allochrome plate can be handled with safety in the ordinary dark room light, be that red or yellow: in regard to which we would caution the user against exposing the *dry* plate to the latter illumination. Once wetted with a developer, a plate is much less sensitive. The price of the Allochrome is 1s. 6d. per dozen quarters.

The "Verichrome" is a remarkable plate. Its color-sensitiveness extends into the red to an extent comparable with that of plates bathed in Miethe's ethyl red. The spectrum tests show this very plainly, and indicate that we have here the means all ready to hand of commencing color-photography equipped with practically the same tools which have stood Dr. Miethe in such good stead. Color-sensitiveness apart, the Verichrome gives a long range of gradation and is cleanly in working. The combination of

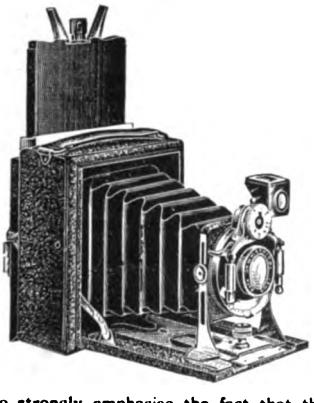
Digitized by Google

these qualities with panchromatic sensitiveness renders it a most valuable addition to the dry plates on the market. Its price is 1s. 9d. per dozen quarter-plates.

Telephotography without a "telephoto" lens, as that term is commonly understood, is provided in a camera invented by MM. Vautier-Dufour and Schaer, and supplied on the Continent by Fred. Boissonas, 1 Rue Centrale, Geneva, and in this country by Messrs. J. H. Dallmeyer, Ltd., Newman Street, London, W. The camera carries a lens of 54 in. focal length, but is kept within the dimensions of about 18×7×9 in. by twice reflecting the rays from polished mirrors. It folds to half this bulk for travelling, but is set up for use in a minute or two While this system has not the advantage of variable focal length possessed by the positive-cum-negative type of telephoto lens, it affords much greater rapidity than most telephoto attachments working at this equivalent focus. As issued by Messrs. Dallmeyer, the camera carries a single lens working at *f*/12 and giving fine definition over the very narrow angle subtended by the plate. Rapid exposures can thus be made on moving objects at a great distance, and photographer-naturalists like Mr. Kearton will doubtless be able to make good use of it. The price of the complete camera in half-plate size is about £50.



The "Rajar" and its Offshoots.—"If you can pull out a drawer and push it in again you can use a 'Rajar' changer," say the Rajar people, and in so expressing the lack of movements to be made and precautions taken when using their apparatus, they are not guilty of taking too rosy a view of things. But they are cautious as well as bold. When we received from them some months ago a Rajar changer with the request to put it to a lengthy practical test, there was enclosed also a packet of dummy films with the commendable object of preventing a poor editor from spoiling a whole packet of films in his first handling of the changer. And with the dummies came some pages of printed directions as to the special dangers and difficulties of working with them. We will confess that we smiled a smile of superior wisdom at the seeming *embarras de riches* in the matter of caution and advice. But we now recant that private and momentary token of a rash assumption. We



cannot too strongly emphasise the fact that though the Rajar requires some persuasion to change its load of ten dummy films, the sensitive films are worked without a hitch —at least that is our verdict after using a large number during the past few months. A strong caution is needed by the superior person who, trying the apparatus on his dealer's counter, is unable to manipulate the changer smoothly, and forthwith dogmatises on its impracticability.

We need not set forth at length the features and construction of the Rajar changer, because the Rajar people—The Brooks-Watson Daylight Camera Co. of Great Homer Street, Liverpool—have a new *brochure* on it just out. Sufficient to say that it holds ten cut celluloid films as flat as any glass plate, that the packet is removed and inserted in daylight, and that the whole apparatus is scarcely larger than an ordinary dark slide. We may repeat our experience of it—that whilst using it for some months past we have not yet had a solitary hitch with it.

And the offshoots? The first of these is the "Cleron" flat film, suitable for any camera or dark slide. The film is marked 128 Wynne, and is certainly of very high speed. Our negatives with very brief hand-camera exposures were of fine gradation and density. The films lie wonderfully flat throughout development and the after processes, and certainly justify none of the harsh criticisms passed upon films in general by confirmed adherents to the glass plate. The price of the film is 1s. 6d. per dozen, quarter-plate size.

The next offshoot is the "Rajar" folding pocket camera, a hand-stand instrument at once strong, light and small. Its strength is concentrated at the right points, particularly at the front; the upright board bearing the lens and shutter is as rigid as that of any hand camera we have ever examined, and much more rigid than the generality of folding cameras. There is large rise of front, focussing scale, fitted with the Beck "Cornex" index, and the usual time, bulb and instantaneous movements. The lens is a Beck R.R. working at *f*/8. The camera is made to carry the Rajar changer, which slips in front of the focussing screen without the latter parting company with the camera; or ebonised dark slides can be used. The price of the camera is popular, £3 12s. 6d., or £4 17s. 7d. complete with changer.

New Businesses, Changes of Address, etc.—*J. A. Hall* has opened at 28 Bridge Street, Sunderland, as photo-dealer.

Mr. Yeo has opened as photo-dealer at Potchefstroom.

The Magic Lantern Journal has been purchased by Theodore Brown, Salisbury, who will continue it as *The Optical Lantern and Cinematograph Journal*.

The "Rotox" Competition.—The Rotary Photographic Co. notify us that the closing date for entries has been postponed to January 31st, 1904.

Ilford, Ltd., reports a profit of £45,550 for the year ended October 31st last. The directors recommend a 12 per cent. dividend on the ordinary shares for the second half year, making the yearly dividend 10 per cent. £813 goes as bonus to the company's employees.

The Goerz Competition has been judged and the list of awards (£300 in money prizes) published. The names include many leading photographers in all parts of the world, and Messrs. Goerz should be well satisfied with such pointed testimony to the value of their lenses and cameras.

Ensign Vidil Films.—Correcting our note of last month, Messrs. Houghton write to point out that they are not the introducers of the films into this country. "The actual position is that Mr. Austin Edwards of Warwick is the licensee for the manufacture of Vidil films in this country; the Ensign Vidil films are therefore manufactured by him, and he has appointed us his distributing agents."

Suter Lenses.—The Altrincham Rubber Co., of Mossburn Buildings, Altrincham, write:—"We have just taken up the sole wholesale trade representation of the Swiss lens maker, E. Suter of Basle, whose lenses have during the last thirty years been so popular all over the continent. We are preparing a new English price list of Mr. Suter's goods, in which will not only his lenses be described, but also some high-class hand cameras capable of producing pictures taken at any speed up to $\frac{1}{1000}$ second. Very shortly we shall have a full stock of these goods, and any of your readers who send in their requests for the catalogue and any other information will receive our best attention to the same. We represent Herr Suter also throughout the whole British Empire."

The Editors desire to acknowledge numerous fresh entries for the Directory of Dark Rooms to be issued as a supplement to the July number of The Photogram.

Owners of dark rooms desirous of displaying the Sign, and of having their names included in the Directory, should ask for the printed form supplied for the purpose.

To Practical Workers.—*The editors are always in search of new contributors to* The Photogram. *Articles are preferred in short series with five or six illustrations, but in all cases the editors prefer to consider suggestions for such series rather than MSS. The status of the writers does not signify in the least, supposing their contributions are on practical topics, are told out of their own experience, and expressed without waste of words.*

Digitized by Google

BE BRIEF!—*We reserve the right of condensing all correspondence, but undertake to leave the meaning intact.*

Personalities barred. Whenever a man's opinions are attacked, with mention of the man's name, we wait until a proof can be sent, and the attack and reply published together.

Anonymous letters are strongly objected to, and those which are not ACCOMPANIED *by name and address of writer, for our own information, go into the W.P.B.*

"The Photogram" Card No. 3 in Russia.

DEAR SIRS AND MADAM,—The method of finding due south with a watch described in your card No. 3 (No. 4 of the new series) has been reprinted in the Moscow *Photo-Society's Journal*, and a plate manufacturer has issued it in an advertisement circular. A Moscow correspondent has sent it as a novelty to the *Photo Revue*.—Yours faithfully,

C. T. CHESTERMAN.

St. Petersburg, Nov. 18th, 1903.

Professional Photography and "Photograms of the Year."

DEAR SIRS AND MADAM,—I am a professional and very desirous of infusing art principles into my work—not that I think the public will appreciate, far from it—but I wish to please myself as far as possible. This being the case, it is evidently necessary to discover the weak points of the general run of professional work. My motive for writing this is to ask your help in elucidating this important question.

Here are a few conclusions I have come to with regard to professional photography.

(1) The high-lights are usually too white and deficient in gradation; in other words, quite wrong in tone.

(2) The lighting too artificial and unlike everyday lighting, although, of course, in professional photography it is necessary to give as pleasing a portrait as possible, hiding defects and bringing out beauties by the method of lighting.

(3) The sitters are treated similarly too much, making a mere likeness and not a speaking character-document. In this respect it is, of course, true that the general public require, not the most characteristic, but the most pleasing portrait.

(4) Professional photography is easily distinguishable amongst a mass of other works (say in *Photograms of the Year*), not because of its surpassing beauty (many amateurs' productions being equal in technique), but because of something very artificial and unreal. This is shown even by such a master of craft as H. Walter Barnett in "A Portrait," page 157 of *Photograms*, 1903.

H. Radford, writing in "Wilson's," says:—"Retouching is the death of tones: make the negative do the work." What kind of negative do you recommend? I find that a negative with face thin (such as is required to give correct tone rendering) shows up all spots, etc., making retouching absolutely necessary. This, by the way, is probably the explanation for the blank whites we are so used to seeing; developing is taken too far so as to minimise retouching.

At the risk of making this letter too long and unconnected, may I say a few words about the Annual with reference to the professional photography therein.

I think "Summer" (6), by Wm. Crooke, immense, but would not a natural background be a great improvement?

"Dreams" (14), by Geo. E. Ecale (not professional), is the best of the French school, in my opinion.

What is the idea of such frightful technique as "A Curtsey" (26), by Clarence White, when the effect could have been obtained much better otherwise?

As for "Solitude" (p. 36), the first effect is of the boy slipping off, then of pity for him because of the honey-combed rock.

"Sisters" (p. 48). The finest thing in expressions I have seen lately, but a little more to the left and bottom would improve.

What a grand thing is "Village Scholar" (88), but I fear it wouldn't sell.

I consider "Lady with Ringlets" (p. 127) as good as any in the book, though Austin Brewster's "Portrait" (p. 78) is a close runner. Expression is so fine, you can imagine the lady's eyes are violet-blue, although probably that is rather a stretch.

"Caught": why on earth is such a "rotter" as "Caught" (p. 120) reproduced?

After all, on looking further, I think "English Roses" (p. 169) by Chas. Sweet, at the top of the tree, not a fault anywhere.—Yours faithfully, W. FOSTER BRIGHAM.

20 The Esplanade, Scarborough.

[We are interested in our correspondent's notes on the professional work in *Photograms of 1903*. His difficulty in obtaining a soft negative not needing much retouching, will disappear if he will use an orthochromatic plate.—EDS.]

Direct Enlargements versus Enlarged Negatives.

DEAR SIRS AND MADAM,—I was much struck by Dr. Grindrod's exhibition at the R.P.S., not only on account of the strong artistic individuality displayed, but by the fact that bromide paper was the medium that he used for expression.

It has always seemed to me that the enlarged negative is overdone. It certainly is pleasant to be able to make your enlarged picture in platinum, carbon or gum-bichromate, but in so many cases the enlarged negative is gained by the sacrifice of "quality," that no amount of working on the back of the enlarged positive will bring back. Certainly I have managed to make bromide enlargements from small negatives that preserved the qualities I had failed to obtain with prints from enlarged negatives.

A great deal of personal control can be exercised in making the bromide enlargement by the use of bolting cloth and by screens of various shapes to meet the exigencies of each case. In the development of the enlargement I do not think much can be done—in fact, my experience has been that correct exposure is a very necessary part of the process.

As regards toning the print, some years ago I toned several prints both with the hypo-alum and the uranium formulæ. These prints were pinned on a screen on which the sun shone for many hours in the year. Duplicates were stored away. At the end of two years the uranium-toned prints were all ruined, but the hypo-alum prints were as good as on the day I had pinned them up. It is true that the atmospheric conditions were good, but, nevertheless, the results were, I think, of importance.—Yours faithfully,

E. G. BOON.

Alassio, Italy.

PRINCIPAL CONTENTS.

Mounting the Exhibition Print. By Fredk. H. Evans.
Improving the Negative. By Clarence Ponting.
The Portrait and the Studio.
From my Note-Book. By Alex. Mackie.
Six-Plate Promenades. By H. G. Springall.
Gaslight Paper for Enlargements. By W. Thomas.
Outdoor Portraiture. Competition No. 12.
"The Photogram" Office.
Picture Post Cards.
What's What.
Forthcoming Exhibitions and Competitions.
Trade. Correspondence.

The Process Photogram

contains the whole of *The Photogram plus* the following articles and notes relating to photo-mechanical processes:—

Modified Collotype for Beginners. By H. G. M. Barstow.
Printing Plates Direct from Negatives.
Process at the Tynemouth Photographic Exhibition.
The Color-Sensitive Dry Plate Half-tone Work.
Densities of Concentrated Nitric Acid at Different Temperatures. By H. H. Veley, F.R.S., and J. J. Manley.
Current Topics.
Correspondence.

Digitized by Google

THE PHOTOGRAM

VOL. XI. FEBRUARY, 1904. No. 122.

WEEPING WILLOW AT OTSU. *By Araeije, Kyoto, Japan.*

(See page 49.)

Digitized by Google

MOUNTING THE EXHIBITION PRINT.

By Fredk. H. Evans.

The second of a series of twelve progressive lessons in modern border mounting. Papers for this month's exercise:—Lindenmeyr's Ruskin Napoli A.F. (as used for last month's cover), and Lindenmeyr's Melton Mordore (this month's cover).

OUR reproduced picture and mount for this month is from a portrait study entitled "Heart of Oak." The bottom mount will be of the same paper as the cover of the January number, the brown Napoli. The picture is first to be carefully cut out close up, great accuracy being observed to keep the angles perfectly true, as any error in this direction will be so magnified at each successive mounting that the final mount will be far more "out" in the rectangularity of its sides than would have been thought possible from so apparently small an initial error.

HOW THE SUPPLEMENT PRINT IS TO BE MOUNTED.

Outside mount of Ruskin Napoli, 12½×8½ in. Inside mount of Melton Mordore, 8½×5½ in. Upper margin of Napoli 1 in.; on each side, 2 in.; below print, 1⅛ in.

The Mordore cover of this month's issue is to form the mount on which the portrait is first to be pasted (by its two top corners only): showing margins round as follows:—½ inch at top; ⅜ths at sides; and ¾ths at foot.

This will now have to be placed on the mount of the Napoli paper, following the above measurements.

The effect aimed at in this mount is for the broad border made by the Mordore of the February cover to give a dull gold inner frame, which in conjunction with the brown color of the bottom mount well accords with the general feeling of the picture as a copy of a painting; it also adds to—or at least detracts nothing from—the dignity of the composition and its general impression; the mount is not obvious in any way, but leads up to and fastens the attention on the picture: which is the first, last, and only proper function of all mounting.

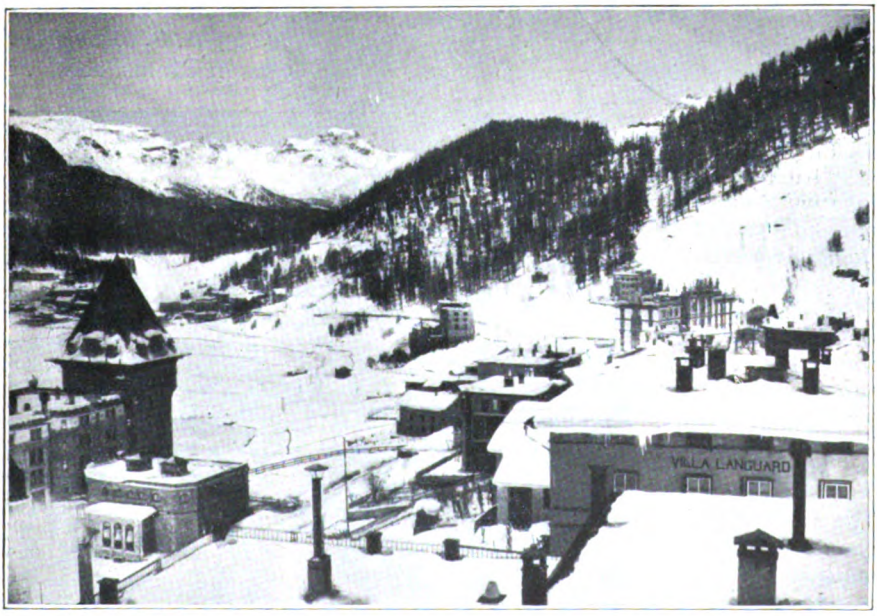
Digitized by Google

REAL AND SHAM MOONLIGHT PICTURES.

By Mrs. Aubrey Le Blond.

ONE of the accompanying photograms was, literally, moon-struck. As a result it looks very much like a homely, everyday view taken without sun in the daytime. If the public wants realistic moonshine, it must accept the spurious article, for all the sensational pictures given us by the camera and purporting to represent moonlight scenes are turned out by sheer trickery—and I ought to know, as I have many such "moonlighters" in my own collection.

Here, however, are a couple of views for comparison, one taken on a full-moon night—a Christmas night, as it happened—in the Engadine. It will be noticed that though the detail in the shadows is visible, yet the picture has a flat, uninteresting appearance, owing to the shifting of the shadows as the moon glides on during the long exposure. In photographing by moonlight the camera must not be pointing towards any portion of the sky into which the moon itself can pass, otherwise we shall have a "silver



From the window of the Kulm Hotel, St. Moritz. Exposure in bright moonlight, 2½ hours.

Digitized by Google

At St. Moritz, Engadine. Moonlight effect by daylight.

streak," as upsetting to the operator as is its namesake to the indifferent sailor. It is true that the stars sometimes make lines across the plate, but in bright moonlight they are faint enough to be disregarded, just as we disregard any figures moving about during exposure. Very bright electric lights, however, are a serious inconvenience, causing circular blotches of halation.

For a snow-covered landscape I have found three hours with *f* 16 a correct exposure. For ordinary subjects by moonlight a longer exposure will be required in order to get plenty of detail into trees and other dark objects.

The moonlight effect shown in the smaller illustration is easily obtained in daylight by working against the light with the sun fairly high in the sky, and giving a very short exposure with a small aperture, say $\frac{1}{20}$ of a second at *f* 22 on a rapid plate. The sun must be behind clouds for the best effect, and care given in development to work for the detail in the sky and water, disregarding that in the shadows.

THE MOON THROUGH TREES.

By H. G. S. Anderton.

Probably nearly every amateur has at some time tried his hand at moonlight effects. The old idea of sticking a wafer on the back of the negative to represent the moon, is effective when there are no branches of trees or other obstacles to be overcome, but the results are hardly convincing when the moon is made to appear as if stuck on the trees. The following is a simple and efficient method of surmounting this difficulty.

FIG. 1.

Digitized by Google

The first step is, of course, the taking of the negative from which the moonlight picture is to be printed, and a little advice upon this part of the process may be acceptable.

In the first place the picture must be taken against the sun, which must, of course, be unclouded if the moon is included in the finished photogram. Give a very brief exposure, so as to avoid much shadow detail, and also to accentuate contrasts. Go as near to including the sun in the picture as possible without fogging the negative.

FIG. 2.

This is necessary in order that the moon may be placed as near the original source of light as practicable, thus avoiding false lighting.

FIG. 3.

It is important to select a suitable view. Many bits of scenery unsuited to day work may be made into charming little moonlight studies. Fig. 1 is a typical view taken about noon with the sun shining over the trees on the left.

All the necessary apparatus are a printing-frame, a piece of glass of the same size as the negative, and a box of sharply-cut small paper discs.

The piece of clear glass is first placed in the frame and the negative laid film upwards on it. The frame is now held up to the light, and the correct position for the moon having been carefully considered and decided upon, one of the discs is stuck on the back of the plain glass.

The negative having been removed, the piece of paper upon which the print is to be made is placed in the frame with its film side in contact with the glass, and a graduated tint printed upon it, the moon, of course (represented by the paper spot), remaining white.

Digitized by Google

The method of doing this consists in covering the frame with a large card and drawing this slowly downward so as to gradually expose the paper.

When the card is down to the level of the horizon of our finished print or thereabouts, it is *swiftly* returned to its former position and again *slowly* drawn down; the movement being repeated until the desired depth is obtained. The result of this operation is shown in fig. 2.

The glass with the spot upon it is now taken from the frame and laid aside. The negative is placed in the frame, and the sheet of paper with the graduated sky and moon is laid upon it, and the whole set to print. In this way the trees which cross the moon will impress themselves upon it. The finished result is shown in fig. 3.

So much for P.O.P., but undoubtedly the best results are on rough bromide paper slightly toned. With the latter the procedure is much the same, the only difficulty being the printing of the sky, though this difficulty is only a seeming one, however.

The arrangement of the moon on the piece of glass is carried out exactly as described above. In the dark room the bromide paper is placed film down upon the glass and the frame covered with the big card. Now turn up the light and go through the movements of sliding the card up and down as before. The length of this exposure will depend on the depth of sky required. As a rough guide, say, go through the movements three or four times, the whole occupying about half the exposure required for the negative, and the operations being conducted at twice the distance from the light.

Before removing the paper from the frame, mark the position of the moon on the back with a lead pencil, so as to avoid placing the paper upside down on the negative. Substitute the negative for the glass, and expose again.

Amidol is a suitable developer, and with "Barnet" rough bromide paper is easy to use and gives me very good results. The strength of the developer has a great influence on the finished result. For these soft mysterious effects we must use a dilute solution and expose generously. For bright clear moonlight with well defined shadows and strong high-lights a strong developer and a shorter exposure will be required.

The uranium-iron toning for bromide paper given in *Facts, Figures and Formulæ* gives an ideal tone with a few seconds' immersion. This bath is very rapid in action and the progress of toning must be carefully watched.

Moonlight on the Coast. By Ellis Kelsey.

Digitized by Google

TRUTH FROM LIES.

Some remarkable stereograms copyrighted by Underwood & Underwood, London and New York, with notes by Henry V. Hopwood. The first of a series of articles showing the curious and interesting results obtainable with the camera and stereoscope.

AMONG the miscellaneous curiosities which always find a place at the end of the sixpenny magazines none is more popular than the photographic illusion, which always seems to retain its interest. This is perhaps due to the manifest contradiction which these pictures oppose to the well known dictum "Photography cannot lie." This contradiction is justified in the case of double exposures, or trick-pictures of a similar nature; but the most noticeable of these photograms usually owe their effect to a skilful exhibition of perspective distortion, and when one turns over a collection of these pictures it is difficult to realise that, as a matter of fact, they are excellent proofs of the consistent and unswerving accuracy of the photographic lens in the delineation of absolute fact.

As a proof of this, look for one moment at the boots in fig. 1. It must be admitted that at the first glance they do not appear to bear out this claim for absolute accuracy, but that is merely because we have chosen a wrong point of view. Similarly, the hands of the young lady in fig. 2 are as normal in size as are the boots in fig. 1 when regarded from the correct point of view. Photograms of this kind are no exception to the general rule; a photogram is true to nature

FIG. 3.—Throw back your head and you will see that this is one of the big trees in Stanley Park, Vancouver. *Underwood & Underwood, London and New York, copyright 1900.*

Digitized by Google

when viewed at a distance equal to that which separated plate from lens in taking the picture, *and then only*. Considering that we usually view photograms at a distance of at least 10 inches, it follows that we very seldom receive a correct impression from any photogram whatever, and the illustrations to this article are merely extreme examples of distortion daily endured by us because unperceived.

To test this with the examples before us is somewhat difficult, the originals having been obtained with a somewhat short focus lens, and the prints by Messrs. Underwood & Underwood having been slightly reduced from their original scale. But closing one eye and regarding one view, we notice that as we bring the picture nearer to us the perspective more and more nearly approaches nature, and could we bring it sufficiently near, the perspective would be absolutely correct. To attain this end, however, we should have to bring the view within the limits of indistinct vision, but by using a stereoscope we are enabled to lessen the distance and still see the view clearly. On looking at the reproductions in the stereoscope for the first time, the reader will scarcely be able to repress an exclamation of astonishment at the remarkably improved perspective, and he will be disposed to agree with the view taken by Messrs. Underwood that the stereogram is the most forcible form which the product of the camera can take. Figs. 1 and 2 exhibit perspective distortion in a horizontal direction, but the vertical is equally common. Here, parallel vertical lines appear to converge, but the same rule holds good, *i.e.* view the photogram under the same conditions as obtained in taking the negative. Placed in the stereoscope, and held above one's head, the apparent hill in fig. 3 resolves itself into the trunk of a tremendous tree; the seeming steps in fig. 4 (page 47), when the stereoscope is held down, reveal themselves as the lattice work of the Eiffel Tower, viewed from the top.

FIG. 1.—Exaggerated perspective, which disappears on the reproduction being examined in the stereoscope. *Underwood & Underwood, London and New York, copyright 1902.*

Thus, by the aid of the stereoscope, we are enabled to reproduce original conditions and arrive at

Digitized by Google

truth—approximate truth, that is to say, for correction and causation of distortion by the stereoscope is a subject of itself. But these distortions, even in the single picture, may be corrected. Take any photographic print, view it with one eye at a distance equal to the focal length of the lens with which it was made, and the details will stand out in almost their natural solidity. Perspective becomes correct, and if we look through a tube, so as to mask the edges of the picture, we obtain an effect almost equal to that given by a stereoscopic view under stereoscopic conditions. But the adjustment of distances, in order to obtain the full effect, requires to be effected very accurately: more accurately, indeed, than can be expected to be attained by the rough-and-ready method outlined above, and the firm of Zeiss have just brought out an instrument which renders the necessary accuracy easy of attainment.

FIG. 2.—For inspection in the stereoscope, when the lady's hands assume their correct proportions. *Underwood & Underwood, London and New York, copyright 1902.*

The "Verant," shown in fig. 5, consists of a sliding framework, by means of which the view may be brought nearer to, or pushed further from, the inspection lens. This lens is fitted in a screen, and is provided with an eye-ring serving to centre the eye and exclude extraneous light. By this arrangement the eye is held in such a position that its centre of revolution corresponds to the optical centre of the lens by which the view was produced, while the lens of the instrument (11 or 15 cm. focal length) serves to furnish a magnified image of which, the position of the eye being fixed, the perspective is true.

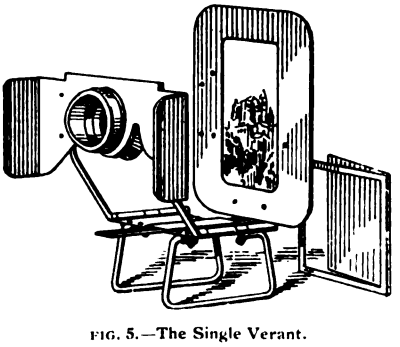


FIG. 5.—The Single Verant.

Digitized by Google

The route, showing points of view.

SIX-PLATE PROMENADES.

A series of brief walks, each for six exposures, planned to secure the most favorable lighting.

II.—THE EMBANKMENT.

By G. H. SPRINGALL.

IN JANUARY—FROM WATERLOO TO CHARING CROSS.
IN MARCH—CHARING CROSS AND WESTMINSTER.

In this walk all the exposures will be found between Charing Cross Bridge and Somerset House. A start should be made about 10 a.m. Leaving Waterloo Station and reaching the Embankment by way of Charing Cross Foot-bridge, a short walk brings Cleopatra's Needle within range. The camera should be held out over the river to avoid the ugly convergence of the lines of the parapet. The curve on the river here is in the right direction, and is a great help.

The light being exceptionally brilliant and the air being very clear, $\frac{1}{50}$ sec. *f* 16 was used as the stop for the whole of these six exposures. The shutter being faster at a fiftieth than its indicated time, no bromide was used, and the resultant negatives were good.

A few yards further on a good position can be found from which to expose on the Sphinx. Here the distribution of the subjects (chiefly pedestrians) in the foreground will require somewhat careful consideration.

The possession of a "reflex" camera overcomes many difficulties very easily, but the camera used to secure the accompanying pictures was the Sanderson hand, a type much more in use than the reflex, and for all-round work more serviceable. Whatever the instrument, the operator should "know" it completely, and at least be able to make an exposure, change plate, etc., *without looking at the camera.*

Put not your trust in finders is a warning that nearly every one should take to heart. It would seem that with the exception of one or two very high class firms most manufacturers put a finder on to ornament the camera, and if the finder shows *something* which is wholly or partially on the plate *somewhere*, the ornament is considered a success. If your finder is untrue—and it most probably will be—a line of black varnish may be used to block out that part of the picture not to be found on the plate. A better method is

I.—Cleopatra's Needle.

Digitized by Google

II.—The Sphinx. III.—Somerset House.

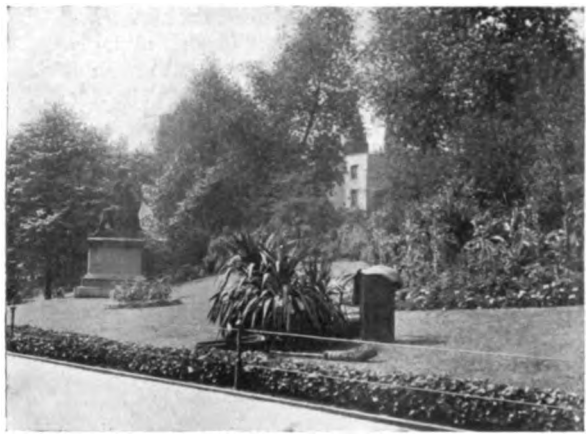
to ignore the finder and get used to judging the angle which the lens includes.

But to show the application of these precepts! When photographing the Sphinx progress was impeded by pedestrians staring at the camera. I therefore turned my back upon the subject, gazed deliberately at Charing Cross Bridge, and while gazing, made the camera quite ready for exposure. A glance showed when the foreground was satisfactorily filled, and the exposure was made while the figures were free from any suggestion of the camera.

From a yard the other side of Waterloo Bridge an exposure can be made upon Somerset House (Exposure III.). It forms a passable curve, and in sunlight looks much better than many people think.

The return journey is made through the gardens in front of the Hotel Cecil. The fourth plate was exposed from a seat from which the fifth subject—the outdoor restaurant—was selected. In order to guard the camera from becoming a source of offence or discomfort to the most punctilious, the point from which to make the exposure was also settled as we sat. To saunter unsuspiciously along the path was an easy matter: it did not take five seconds to turn at the point selected, steady the camera, expose, and walk on.

Digitized by Google



IV.—Embankment Gardens—
The Burns Statue.

The inscription on the pedestal is—

ROBERT BURNS.
1759-1796.

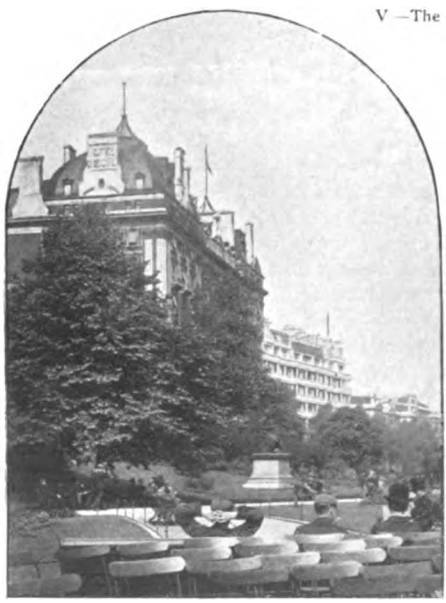
The poetic genius of my country found me at the plough and threw her inspiring mantle over me. She bade me sing the loves, the joys, the rural scenes and rural pleasures of my native soil in my native tongue. I tuned my wild artless notes as she inspired.

The last exposure was made from the bandstand, the two hotels looking very tempting in the sunlight.

These six exposures were, of course, all made with the camera directed citywards.

One hour would suffice to make these exposures, and the journey finishes, where it commenced, at Charing Cross.

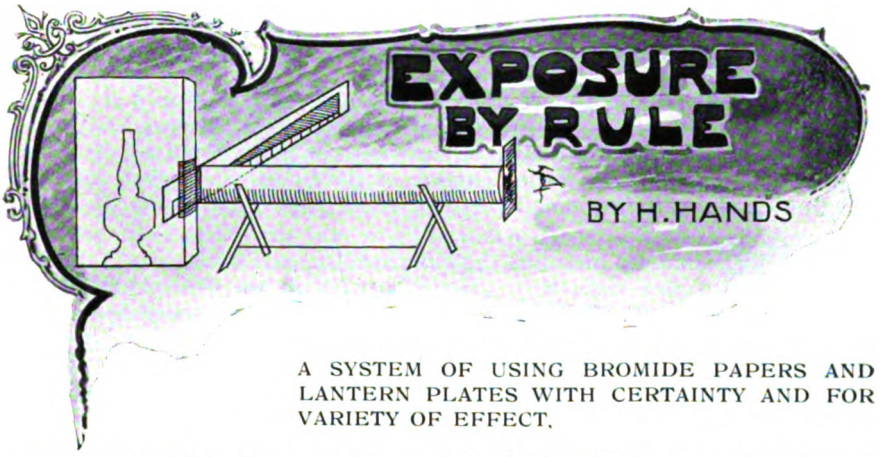
V.—The Outdoor Restaurant, Embankment Gardens.



VI.—From the Bandstand, Embankment Gardens.

The walk can be extended to a great number of exposures without moving very far from the scene of operations. The Savoy churchyard is close at hand, its gravestones shaded by plane trees and lilacs. Across the Strand is Covent Garden Market, with its groups of porters and market women, its gloomy St. Paul's church and its foreign looking "piazza." Further along the Embankment are the Temple Stairs and the picturesque surroundings of the Metropolitan Temple Station. For the hand-camera man, too, the Embankment is rich in subjects of a kind outside the scope of these planned walks: groups of loiterers reading, dozing, or contemplating the broad river by which, perchance, they would gladly leave the City of Despair.

Digitized by Google



A SYSTEM OF USING BROMIDE PAPERS AND LANTERN PLATES WITH CERTAINTY AND FOR VARIETY OF EFFECT.

The method in brief.—Use not one but several brands of bromide paper or lantern plate to meet the needs of different negatives or to give different effects. Find once and for all the relative *exposures needed by these plates or papers, and then, after one preliminary trial with some selected negative, ascertain the correct exposure of any negative by inspection in the apparatus described below.*

It is better to work with several brands of bromide paper or lantern plate, because by doing so we can make the best of hard or soft negatives, and can produce a variety of results impossible with one kind of sensitive paper. For example, a stock of "Barnet Smooth," Eastman's "B" and "Royal," and Wellington's "Enammo" paper, or—for lantern slides—of Ilford "Special" and "Process" and Thomas' lantern plate, permit of this. This plan need not multiply the bottles on one's shelves. Metol, hydroquinone and pyro will do everything: the first two singly or combined for paper, or the whole three, aided by ammonium carbonate, for slides. There is also Fergusson's copper toning solution for both kinds of work.

The first thing is to make a number of exposures on the different plates or papers, developing all with, say, a standard metol-hydroquinone developer. Make a note of the relative exposures, and divide each by that needed by the plate or paper most used, so that you can tell in a moment when using one of the others that one half or twice the exposure must be given, as the case may be.

Having satisfied yourself as to this, make, from a good average negative, four prints on each paper, pencilling the brands on the backs, and exposing according to the first trials. Suppose we have four brands of paper. Develop the sixteen prints in sets of four, each set consisting of one print on each of the four separate brands.

One set (*a*) should be developed to what is considered a good black and white print; the next (*b*) slightly over-developed; the next (*c*) taken to a still deeper stage, and the last (*d*) developed as *a* to a good black and white print, but with the hydroquinone omitted from the developer. This last batch of prints will be more delicate than the *a* series. Those of the *b* set should be toned in the copper bath to a sepia, and those of the *c* series to a red in the same bath, and the whole lot mounted for reference in an album. A glance will show the kind of result as regards contrast and color to be obtained, and will be a most useful guide in dealing with various negatives. In regard to the copper toner, let me say that some papers will blister after it sometimes, but this can be prevented by a salt bath used directly after the

Digitized by Google

copper toner: the salt alters the color slightly. Now for the appliance wherewith to ascertain the exposure of any negative without trial pieces. The principle on which it depends will be clear on comparing the description with the directions for using it.

Materials required:—A piece of cardboard tube used for Ilford six sheets 17 x 24½ in. P.O.P. (or any tube of similar diameter) 9 in. long and with the cap left secure on one end; a strip of cardboard or piece of old mount 12 in. long and ¾ in. narrower than the diameter of the tube; some glue, paste or seccotine; a sharp knife; small piece of black paper, and a bit of tissue

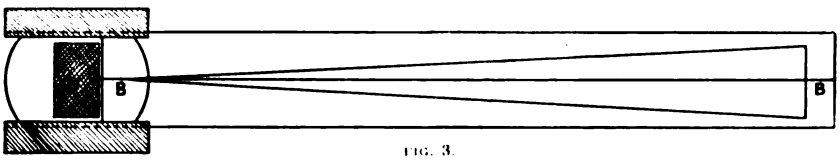


FIG. 3.

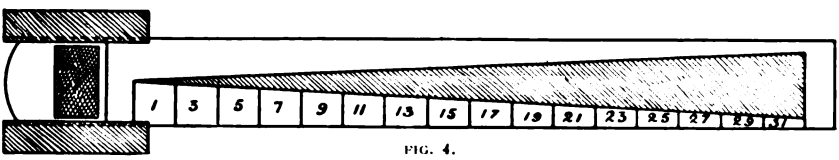


FIG. 4.

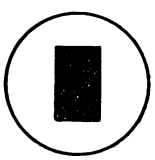


FIG. 1.

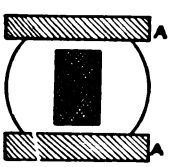


FIG. 2.

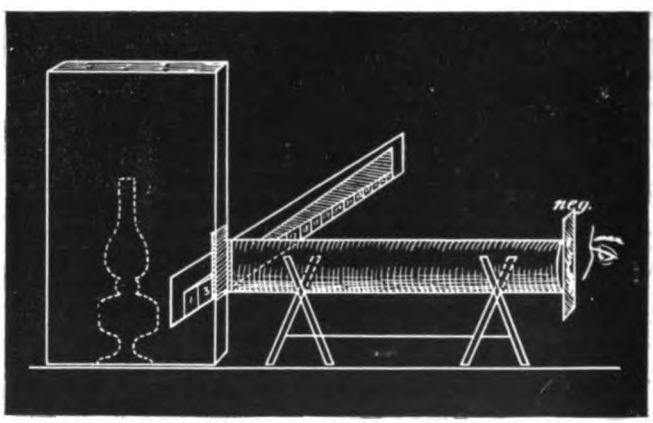


FIG. 5.—Using the apparatus: the negative placed with its densest part over the tiny cross on the end of the tube furthest from the lamp.

paper. Cut out a piece of white paper 1 x 1½ in., paste it carefully on the outside of the cap of the tube, and see that it is *exactly* in the centre. When dry, cut out the piece of the cap covered by the white paper (see fig. 1). Cut two pieces of old cardboard a shade thicker than the 12-in. piece mentioned above, length the same as the diameter of the tube and ½ in. wide; fix these on the cap of the tube above and below the hole (A A, fig. 2), and allow to dry. When dry, fix on the top of these two pieces two other pieces of eard of same length but ⅛ in. wider, thus making a rebate or groove for the 12-in. piece to slide into (fig. 3); the dotted lines show the overlap of the upper piece of cardboard. Carefully bisect the width of the 12-in. piece and mark with a rule and pencil (B B, fig. 3). On this line set off a point 1 in. from each end. Through one of these points draw a line 1 in. long at right angles to the long sides. From the other point draw two lines, one to each

Digitized by Google

extremity of the 1-in. line, thus describing a triangle. Place the 12-in. piece on a piece of hard wood or soft metal, cut out with a *sharp* thin blade the triangular piece shaded in the figure, using a straight-edge to guide the blade accurately over the pencil lines. The blade must be held straight, and the cut made clean through the cardboard, so that no fray is left on the edges; this is important. This triangular opening is then divided so as to show a scale of equal parts, exactly the same width as the hole in the cap at the end of the tube (fig. 4), and marked with the consecutive odd numbers, commencing at the apex of the triangle.

The other end of the tube must be nicely cut so as to set on a flat surface without leaving any "room" for daylight, and then the black paper, damped to expand it, is fastened over the opening with paste just like a paper cap, and when dry should be truly flat and drum-tight. The exact centre of this paper cap is then found and marked with a pencil. A thick steel knitting needle is then held in a flame with pliers till red hot and then pushed straight through the paper at the point marked. Over this hole a piece of tissue paper is pasted, and with Indian ink a cross is made on the tissue paper.

In order to ensure accuracy of comparison it is essential to have a light as nearly uniform as possible, also some means of keeping the tube directed to the light at the same angle. This is easily and cheaply done as follows. A small oil lamp with round wick, such as is used for bedrooms (usually with fancy globes or chimneys), and giving a light about equal to one candle, should be procured, and if it has not a plain glass chimney, one should be provided. A cardboard screen should now be made for the lamp. It may be a box without top or bottom, so as to slip over the lamp, and high enough to be exactly on a level with the flame. A round hole should be cut of about the same diameter as the tube above described, and this hole should be covered with tissue paper to diffuse the light. Then two little struts should be provided by nailing together two thin pieces of wood in the form of an **X**, and they should be of such height

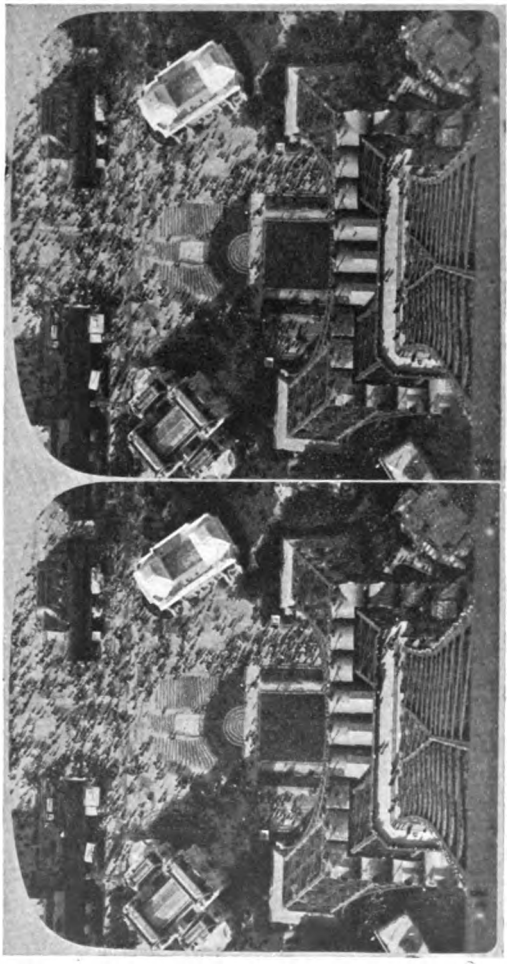


FIG. 4.—Point the stereoscope downwards and look down from the Eiffel Tower. *Underwood & Underwood. London and New York, copyright 1901.*

Digitized by Google

that when the tube is resting upon them the slot in the tube is exactly opposite—that is, on the same level as the hole in the screen. If these two struts are joined by a bar of thin wood they will form a rest for the tube, leaving the two hands free, one to hold the negative, the other to move the sliding piece, and thus conduce to comfort. Small negatives can easily enough be managed without the strut, but it is always preferable to use the latter, as it ensures the proper alignment of the apparatus—an important point (fig. 5). The principle of the apparatus is as follows:—As the 12-in. piece is pushed along in the grooves the aperture increases in a definite manner—the areas of the divisions are as the odd numbers: that is, the second is three times the area of the first; the third is five times that of the first, and so on. Hence when we lay the densest part of a negative against the cross on the tissue paper, and look through it, we shall see the cross with greater or less distinctness, according to the extent to which the light is cut down by the sliding piece. In other words, we measure the opacity of the negative by the figures on the sliding piece.

This we must do in a perfectly dark room. We set up the apparatus with the slot wide open and close to the opening in the lamp screen, and place the densest part of the negative film side against the cross. Then we move the slide-piece slowly along until the cross at last disappears, and then reverse the movement until the cross can be just made out. Then we read off the number and make a note of it.

The same lamp must always be used, and the same quality of oil, and the wick (which should never be cut, but have the charred top pinched with the fingers, using a piece of paper to save soiling the hands) turned up just short of smoking point.

Now having found the density number of one negative, and made one or two prints with various exposures until we get a good result, we are in a position to expose other negatives correctly, simply by finding their density numbers. By way of example, suppose our test negative is 10 on the apparatus, and requires thirty seconds' exposure at 18 in. from our usual source of light, then another negative, which is 15 on the apparatus, will want forty-five seconds' exposure.

The exposures needed when working with other papers we already know. All that remains is some means of easily knowing the exposures necessary at other distances from the light, and to do this a good plan is to fix a lath alongside the lamp, marked in inches, and with the relative exposures required at different distances, thus:—

Distance of printing-frame from light	3	6	9	12¾	15	18	25½	31	36	40¼	44
Equivalent exposure compared with that at 18 in.	1/36	1/9	1/4	1/2	3/4	1	2	3	4	5	6

This same caution as to keeping the lamp or other light constant holds good here as in regard to the density apparatus. Use always the same kind of oil, keep the wick clean, wiping it with a bit of cloth, and always allow it to burn for a few minutes before making any exposure.

In addition to serving to fix the comparative densities of the high-lights, this apparatus serves another purpose—it shows the range of gradation. For our purpose negatives may be divided into two classes: (1) those which when laid down on white paper show clear, or nearly clear, shadows, and (2) those in which the shadows are fogged. In the first class the range of

Digitized by Google

gradation is shown at once by measuring the density of the highest light, the measure of the clear shadows being considered as at zero. In the second class the opacity of the deepest shadow is measured with the instrument in exactly the same way as the highest light, and then the gradation range is the distance between the two numbers; *e.g.* if negative reads 5 for the deepest shadow and 15 for the highest light, the range is 10, and the negative would be considered as having the same range of gradation as one in class (1) of which the highest light measured 10.

As has been already pointed out, when one negative has been printed and a note made of the exposure and distance from the light of the printing frame, any other negative in the record may be printed straight away without any tests. In first finding the exposure for a given density number a negative giving a good print with a normal developer (I mean a print showing the full range of gradation the paper will give) should be taken as a standard, and the range as shown by the instrument noted. It then follows that a negative showing a much smaller range will, with normal treatment, give a flatter print, and we know that if a stronger result is required we must apply special treatment, such as a minimum exposure and development with a strong developer well restrained. Conversely, with a negative showing a much longer range, we are shown that, unless special treatment in development is applied, we shall get a print choked up in the shadows if the exposure is made for the highest light, or high-lights chalky if the exposure be made for the shadows. Hence we are warned to print such a negative as close to the light as the size of the negative will allow, and develop in a more diluted developer with the minimum of restrainer. If the operator has sufficient interest in his work he will use hydroquinone for the prints from negatives showing too short gradation, and metol for those of too long a scale, using the mixed developers for normal negatives. All this, supposing brilliant prints are required.

JAPAN AND PICTORIAL PHOTOGRAPHY.

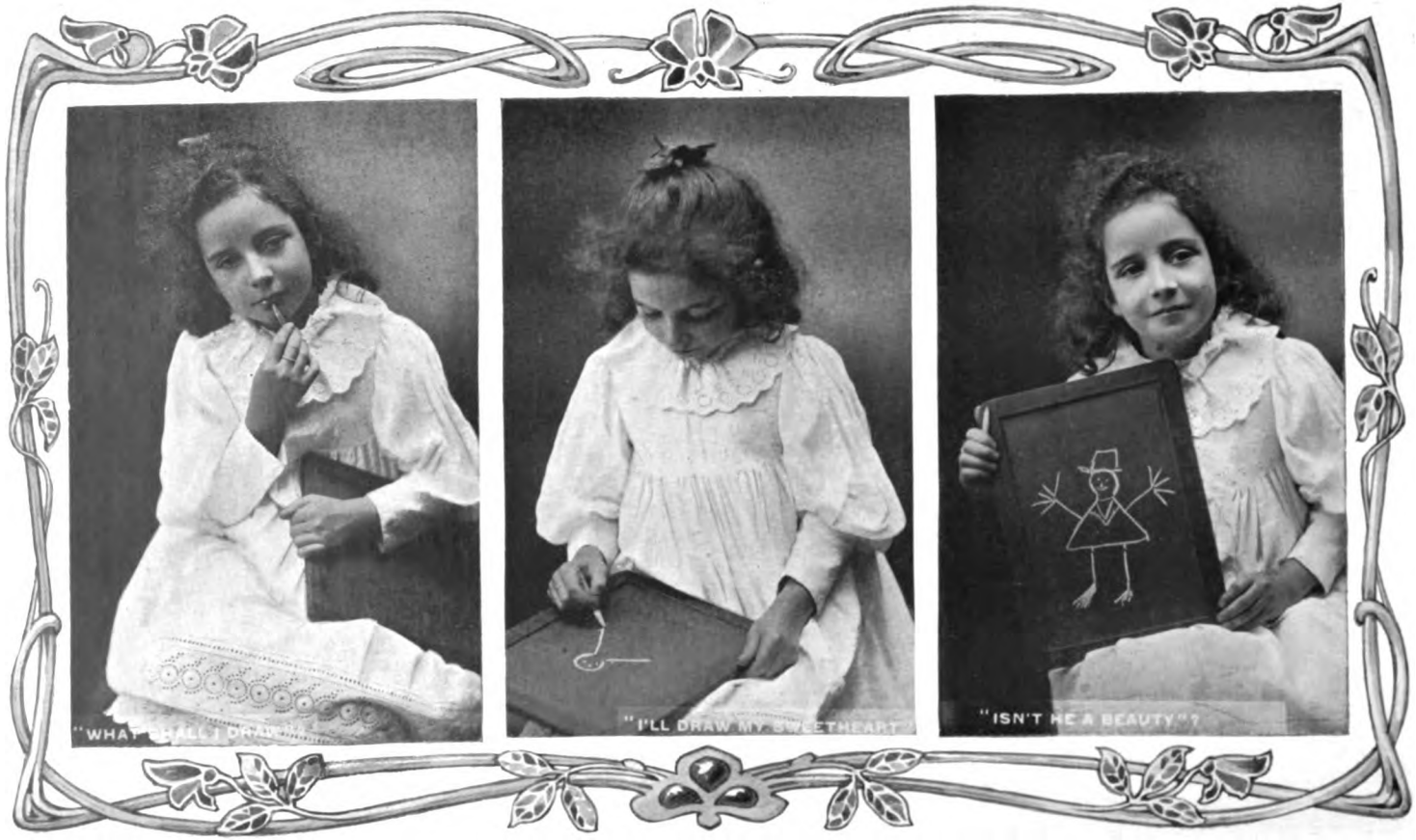
A note on the picture, "Weeping Willow at Otsu," page 33.

How is it that Japan, with a people of innate artistic temperament, has contributed nothing to the world's pictorial photography? An explanation given by the late W. K. Burton was that Japanese art is at first imitative. Borrowing from Chinese and Korean ideas, Japan has gradually originated art of its own in painting, carving, ceramic and lacquer work. No wonder, then, that it should be slow in assimilating the modern craft of the camera.

What interests us, however, to no slight degree is the evidence that is offered by the little study on another page, that there is at any rate one worker in Japan who finds in the camera a means of artistic expression—and his art is essentially Japanese. That weird fragment of tree, high up between earth and heaven, is a bit of fantastic selection of a quality best described by the nationality of its author—Japanese. It obtains its character, not from the subject, but from the treatment. The artist's notion is like nothing a European worker would produce. It would seem to be done largely with an eye to decorative effect, but how different from the result an English photographer would offer as a study of a willow!

Let us add that the original of "Weeping Willow" comes to us from our friend Mr. T. B. Blow as a matt silver print, innocent apparently of handwork on itself or on its negative.

Digitized by Google



"Post Card" Competition, First prize, Charles H, Evans, Swansea.

Digitized by Google

THE PORTRAIT AND THE STUDIO

SOME OPERATORS' METHODS.—The second of a series of articles in which H. Snowden Ward deals with the practice of leading professional photographers. A review of progress in portraiture is here completed: the study of the modern work will commence next month.

Copyright by The Photogram, Ltd., *England.*
Copyrighted 1904 by Tennant & Ward, New York.

THE operator of twenty years ago usually worked single-handed, and as he seldom had fixed ideas as to how he would treat any given sitter, or any matured scheme of lighting, he spent a long time shifting a blind, rushing to the sitter to adjust the pose, rushing to the camera to see the effect, then back to the blinds, back to the sitter, and back to the

By A. E. Sellman.

By W. J. Byrne.

camera, in a bewildering race. Often he would completely change the sitter's position from sitting to standing, and even from one end of the studio to the other; would run his camera to and fro, racking it up and down, focussing in and out, while he considered the rival merits of full-length, half-length, and head-and-bust treatment. Even when all was arranged, he had to make a rush to the dark room for the plate-holder, re-focus, and finally consider, run behind the sitter for a last tightening of the screws of the rest, and take a final look at the blinds and curtains before ostentatiously putting in the plate-holder, drawing the shutter, producing a watch and asking for "Just a little smile, please, and the chin just a *leetle* higher,—thank you; now,—*quite* steady please!" This may seem exaggerated to people of to-day, but I well remember standing for a simple full-length portrait, in hat and coat, in one of the best provincial studios of some twenty years ago, when the operator was exactly eighty minutes before he exposed the first plate, and exactly forty minutes more before exposing the second.

Digitized by Google

Individuality and progress have been manifested in nothing more distinctly than in the treatment of the sitter. It gradually occurred to photographers to do their experimenting with the light before the sitter came; and, before asking him to be seated, to decide upon the position (not the pose) and the lighting arrangement for at least the first exposure. It became a common idea to have an assistant at the camera or at the blinds, while the operator did the posing, and to let the assistant manage the plate-holder and the exposure while the operator gave his own attention to securing expression. Gradually, too, the actual posing of sitters by moving their arms or pushing their heads to and fro, went out of fashion, until the operator of to-day secures his effects almost entirely by word and not by deed. He asks the sitter to move his head, places a print or other object to attract the eyes, and relies upon the arms of the chair, a little table, a book, flower, or other object, to secure satisfactory pose of hands and arms.

By Harold Baker.

One of the earliest single-handed operators whom I personally found to fix his lighting and position (not pose) of the sitter in advance, and to rely largely for his effects upon changes in the position of the camera, was A. E. Sellman of Huddersfield. His operating was quick and quiet; the exposure was not announced; a shutter with a long tube was used, so that the direction of the face and eyes, and the expression, could be managed by directing the sitter's attention to the operator, which was done, not by any request to "look this way," or to "smile," or to "keep steady," but by telling some little anecdote, referring to a flower or plant in the studio, or chatting on some topic of the day.

By Harold Baker.

The same method was carried still further by Harold Baker of Birmingham, who is not at all a believer in bothering with the curtains and blinds during a sitting. When I was with him in 1897, he sent for our mutual friend Mr. E. C. Middleton, placed me in a chair, and said, "Talk to this man for a while, and I'll just walk around and look at you," or words to that effect. During a short chat, four exposures were made, of which I reproduce two, as showing variations of expression obtainable by such a method, and difficult to secure in the more formal way.

Another notable apostle of the simple method of operating is Fredk. Hollyer, who does not greatly love portrait work, who usually limits it to one day a week, devoting the rest to the copying of paintings and studies for artists, but who has done some of the most masterly portraits ever achieved by photography. He takes his operating easily; talks little, but observes much;

Digitized by Google

and if the sitter is a personal friend, and the studio is not to be shortly occupied by ladies, smokes his favorite pipe. He is quite a believer in making one pose serve two purposes, or one position serve for two poses, as may be gathered from the two portraits reproduced in small size.

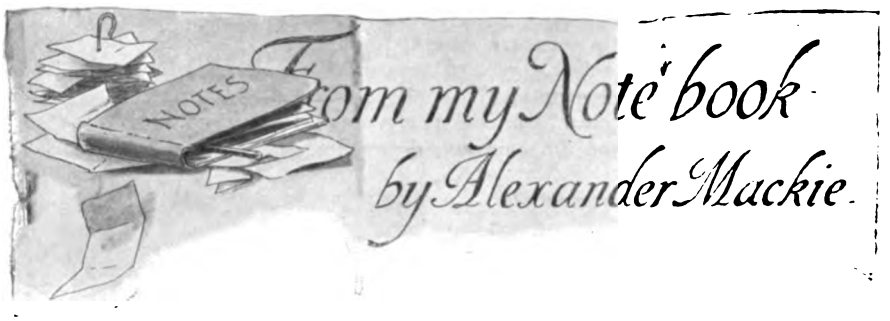
One of the first photographers to reduce operating with an assistant in the studio to a perfect system, was W. J. Byrne of Richmond, the man who for very many years was unapproached for his studies of children, who

By Fredk. Hollyer.

swept all the awards before him; "was medalled at a hundred exhibitions," and whose recent retirement removes a remarkable man from the profession. While the taste of his wealthy and aristocratic sitters seemed to demand elaborate setting for their portraits, with the result that he carried the designing and use of fanciful accessories and backgrounds to a length which has probably not been approached by anyone else, his method of working when once the sitter had entered the studio was marked by great ease, smoothness and certainty; and so well was he supported by trained assistants that any little alteration of lighting which might seem necessary, and the making of the exposure, were directed by the slightest movement, and seldom required the spoken word. Mr. Byrne was one of the first to realise that two men working in complete sympathy were more than twice as good as the best man working alone. He was one of the first to let his sitters do most of the posing: which is a very different thing from photographing sitters who are not posed at all—many a bad operator did that, even in the earliest days.

Perhaps the most important fact in the improvement of operators' methods has been the gradual realisation that "the good photographer observes more poses than he creates." This has been clearly demonstrated in the recent sittings I have had for this series of articles, and I hope that it will become apparent from the articles themselves.

Digitized by Google



Retouching Medium.

One of the best mediums for applying to the negative in order to give a sufficient tooth to the retouching pencil consists of ordinary turpentine partially oxidised by exposure to light and air. If an ordinary 4-oz. bottle be filled to about an inch deep with ordinary turpentine—the turps of the painter—and placed on a window-sill, uncorked, for a week or so, the contents will be found to have acquired a new character: it will not be completely volatile as fresh turpentine is, or should be, but a thin layer applied to a negative in the usual way of using a retouching medium will leave on evaporation, even if heat be used, a perceptible film. Prolonging the oxidising action naturally increases the amount of unvaporisable material, and at length the bulk will become as thick as treacle. At any too advanced stage the medium can be brought to usable strength by dilution with fresh turpentine.

Recovering Gold from old Sulphocyanide Baths.

There are several reasons why it is preferable to use a fresh toning bath for each batch of prints, but this necessitates some over-expenditure of gold, as the best results are only obtainable when there is some excess of gold in the bath over the amount actually used. There is no necessity, however, that the gold should be absolutely lost. It may be precipitated from the discarded toning bath in the metallic state in a very simple way. Take a small quantity, say about an ounce, of a solution of sulphite of soda containing about 10 per cent. of the salt, add to it a few drops of sulphuric or hydrochloric acid, just sufficient to set free sulphurous acid, the presence of which may be detected by the smell, and add the whole to the toning bath. In a day or so a brown precipitate will be found at the bottom of the vessel, which is metallic gold. The clear solution may be decanted off, the vessel refilled with a new supply of the bath, and the operation repeated until sufficient gold has been accumulated to make it worth while to turn it into money. The amount of sulphite used is practically immaterial. The disengaged sulphurous acid is the agent.

The Dark Room Lamp.

It is a frequent experience that the paraffin lamp in the dark room lantern, although working admirably at first, after a time begins to give a dim light, and to smoke the glass. This is generally attributed to the burner wearing out. There is, however, nothing in a burner to wear out. That it fails to act efficiently is due to a cause entirely preventable when its action is understood. It will be found that in a flat-wick lamp the wick tube is surmounted by a dome having a slit through which the flame obtrudes. The base of the dome consists of a stage of perforated metal. The essential to

Digitized by Google

perfect combustion of the paraffin oil or kerosene is a strong draught of air —hence paraffin cannot be burnt satisfactorily in an ordinary colza oil lamp. The dome is for the purpose of conducting the up draught to the bottom part of the flame, so as to ensure a sufficient supply of air for perfect combustion. It will be found generally that the perforations of the platform are unnecessarily small; and as the perforated metal acts as a strainer, the holes become partly choked with particles of flue and other solid impurities of the air. The fact that the platform is usually wet with the slight overflow of oil, helps the choking by providing means for the floating particles to adhere, and in time the lamp burns badly, simply from insufficient supply of air. The remedy is the obvious one of clearing the air passages. It will generally be found that the dome is merely clamped on to the stage by bent tongues of metal, and a little mechanical skill will remove and replace it. Another cause of imperfect burning is due to the fact that the wick accumulates the aqueous and other impurities of the oil, and long before its length is consumed it ceases to act properly. A new wick should be fitted from time to time, and care should be taken before inserting it to dry it thoroughly. A damp wick will burn badly from the start. The pinion arrangement for raising and lowering the wick will sometimes get out of order, and the simplest remedy for this is to obtain an entirely new burner.

The Ferricyanide Reducer for Bromide Prints, etc.

Many photographers have complained that the ferricyanide of potassium and hypo reducer, although answering well for the reduction of negatives, in their hands produces stains when used for reducing bromide prints, and even for lantern slides. This arises sometimes from neglect of reasonable precautions, and sometimes from natural causes unconnected with the reducer itself. The reducer itself, although compatible with hypo, is not compatible with the fixing bath, which consists, after a plate or a print has been fixed in it, not of simple hypo and water, but of hypo, a silver salt and water, the silver salt being derived from the unreduced silver compound of the plate or print which it is the object of the fixing bath to remove by decomposition. With a solution containing this silver salt, as the fixing bath does, the ferricyanide enters into a complex series of chemical reactions, manifested by the original yellow tint of the solution turning brown and rapidly ceasing to act as a reducer. Thus a print introduced into the reducing bath directly from the fixing bath, or after insufficient washing, is liable to acquire a stain, and that without the intended action being accomplished. The moral is, that the print or plate should be well washed before attempting the reduction. But there is another way the reducer may produce trouble, through no fault of its own. When any of the organic developing agents have been used in the production of the print, the image consists not only of reduced silver, but partly of an organic deposit. The silver is removed, dissolved, to use the usual expression, by the reducer, but the organic deposit is left, and this is generally of a brown or reddish color. Hence it may easily arise that the reducer may be blamed for what has really nothing to do with it. With due precautions it is pretty safe to use the reducer to act generally when the amount of reduction required is not excessive, or to obliterate entirely a light tone, but the removal of a dark tint is attended with more risk.

Digitized by Google

The Post Card Competition.

1st prize (£1 1s.): "F. Y." (Chas. H. Evans, Swansea). 2nd prize (10s. 6d.): "Gas" (A. Edwards, Leeds). Honorable mention: "Viking" (Thomas Kent, Kirkwall); "Curious" (H. Inkpen, Melksham, Wilts); "Hercules" (C. S. Tyler, Earls Colne, Essex); "Billiard" (Wm. H. Brigham, Scarborough); "Orchid" (William W. Baker, Peterborough); "Kid" (Clarence Ponting, Scarborough); "Athenic" (Tom Stone, Pontypool, Mon.); "Pelican" (W. H. Barraclough, Sheffield).

THE set of prints by Chas. H. Evans receives the first award in the post card competition chiefly because the subjects are interesting as well as of a certain pictorial character. Taking a simple fancy as his suggestion, Mr. Evans gives it a photographic shape which is pleasing—and therefore saleable—for reasons quite separate from any purely personal interest the model may awaken.

The second prize goes to a set of prints by A. Edwards, remarkable for the effective way in which the picture proper is presented in post card form.

In reference to the practical methods employed in producing the two post cards awarded the second prize, Mr. Edwards writes:—"The negative of 'A Leeds City Square Idol' was taken on an Ilford Monarch plate, exposure $\frac{1}{25}$ sec., in morning sunlight, with a Ross-Zeiss lens at *f*/7.

By A. Edwards.
Second prize in "Post Card" Competition.

"The borders are added by the well known method of multiple exposure under suitable masks, so often advocated but little used for improving bromide prints and rendering their mounting unnecessary. In this example three exposures under three black paper masks were given. Mask No. 1, large enough to more than cover the post card, is attached to the negative, and has a rectangular portion cut out to allow the selected part to print. The cut-out portion constitutes mask No. 2, and is attached by the corners to a clean piece of glass; this registers the ground tint. The third mask is a combination of Nos. 1 and 2. The portion similar to No. 1 is, however, $\frac{1}{4}$ in. smaller all round than the post card (thus allowing the outer border to print), while the rectangular portion cut out is $\frac{1}{8}$ in. larger all round than the selected part of the view, and when adjusted on a sheet of glass with a piece similar to No. 2 mask within the space cut out, allows the inner border to print. The exposure through this mask is made first, but before taking the post card from the printing frame it is viewed by transmitted light and four marks made on the back to correspond with the four corners of the cut-out portion. Masks Nos. 2 and 1, adjusted by means of the four masks, are then exposed successively.

Digitized by Google

"A surprising advantage of 'bordering' bromide prints in this way lies in the fact that the borders appear to be formed of a slightly different colored deposit from the view proper, so much so that some people have asked if they were 'toned,' and one's editors refer to them as 'tinted'; certainly, by contrast, the print appears more agreeable and less cold in color.

"'The Lady Cyclist' was made in three exposures with two negatives and three masks, one, similar to No. 1 in the previous example, pasted on to the negative of the lady, the cut-out portion, constituting mask No. 2, pasted on to the second negative, a third solid mask $\frac{1}{8}$ in. less in size than the post card to form the border. The faint background is from a negative exposed on Calton Hill, Edinburgh, during a heavy mist. It is not doctored in any way, but just printed to its correct depth, the softness of course forming a good background for the other portion. The plate used, Cadett Spectrum, $\frac{1}{80}$ sec. exposure, Ross-Zeiss lens, *f*/7."

Germany has now its organ of the post-card cult, the name of which, set down in its dignified length, is *Mitteilungen aus aller Welt über Postkarten and über das graphische Gewerke*. It is sent from 63 Jäger Strasse, Berlin.

There are signs that the anomalous copyright law in Germany in reference to reproduction of photograms and other works of art in post card form is likely to be done away with. At present Germany does not forbid the reproduction of a copyrighted work of art when the copies are used to decorate "articles of manufacture," and the German courts have hitherto taken the strained view that a picture post card is an article for use in the same manner as the ordinary type of postal card, and not merely a picture. Hence post card publishers in Germany can pursue a course of legalised piracy, and photographers have hitherto had no means of redress. The fact, however, that a copyrighted portrait of the Kaiser has been pirated for issue in post card form, and has sold largely purely as a picture, has been the means of drawing attention to the injustice of the law as applied to post cards, and it may be hoped that the actions which have turned upon this point may lead to the present unsatisfactory state of affairs being remedied.

In this same connection the authorities in Berlin are being approached by those interested in resisting the suggestion that pictures should be permitted on the front or address side of post cards. Were this to be permitted, the hand of the post card pirate would be strengthened, for the reason that with a picture on the front a larger space could be set aside on the back for the written message, and post card publishers who are using copyright work, as permitted by the German Act, have need to be cautious, inasmuch as the Berlin *Landgericht* recently held that a blank space of half an inch was not sufficient to preserve the *postal* character of the card.

By A. Edwards. Second prize in "Post Card" Competition.

Digitized by Google

COMPETITION NOTES.

Mr. Arthur Marshall, whose portrait as a frequent prize-winner in last year's competitions will interest the less fortunate, is an architect by profession and a hard worker in business and recreation. His "Little Dutch," taken for last year's indoor portraiture exercise, was hung at the Royal last autumn, and has since been medalled quite a number of times in provincial exhibitions.

Arthur Marshall, A.R.I.B.A. Self portrait.

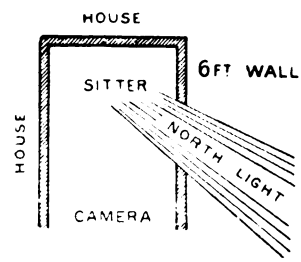
We reproduce this month a photogram honorably mentioned in the "Outdoor Portraiture" competition of which we had not particulars in time for last month's issue. The print is a good example of what can be done out of doors by taking advantage of natural surroundings. The author, Mr. W. Fotheringham, writes:—"A red tablecover fixed to the house was used as background; a right angle of the house was used, *i.e.* house behind and to the right of sitter; on the left was a six-foot wall and a north light coming over it and striking sitter, who was placed four feet from the background and three feet from shadow side."

May we draw the attention of new competitors to the prize of £5 5s. awarded for the best results sent in to the year's exercises? The prize is awarded on a system of marking which is as follows:—For each first prize, four marks; for each second prize, two; for each honorable mention, one. The scoring for this series prize will be recorded month by month.

Entries for the "Figures, Facts and Formulæ" prize close on February 1st, and the results will appear in *The Photogram* next month. The competition for February is "Photography for Profit"—the best instance, told in about two hundred words, with or without illustrations, of how the writer turned his photographic skill or knowledge to profitable account. In this, as in all the other competitions, we draw no distinctions between professional and amateur. The last day for the "Profit" entries is March 1st.

In the fourth competition—a holiday resort for pictorial work—the three illustrations which should accompany a brief description of the town or locality, need not be "pictorial" in the modern exhibition sense. Good technical work, showing the raw material which the worker with artistic aims may expect to find, will be held eligible. The letterpress should state concisely what is to be seen and how to reach it. Literary or archæological associations may be omitted as foreign to the photographer's immediate purpose.

Portrait taken under the conditions shown in diagram.
By W. Fotheringham.



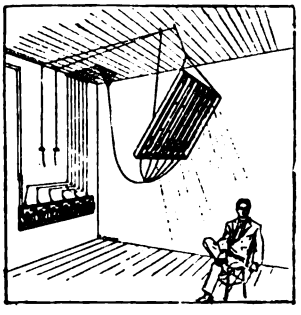
Digitized by Google

What's What

The Hewitt Light, as we have already mentioned, has won the entire approbation of Mr. Pirie MacDonald, whose method of fixing the light we give from *The Photo-Beacon*.

The three tubes of light cost about 300 dollars (£60). It takes 114 volts to run them on a current of 2·8 ampères. The light is estimated at 750 candles. Mr. MacDonald says:—

"A bright, glaring light, as you know, does not give any delicate modelling on faces, and that tone quality is what I am after. My best light here is about 11 o'clock. After that the smoke of the city closes in, and it is all over. Unfortunately, I work with the men who cannot all happen in here at 11 o'clock. Even if they did, I could not handle more than one of them in the hour of good light. They like to get here about 4 o'clock, and then I have all kinds of difficulty in getting the light I want, and my lengths of exposure stretch out to eight and ten seconds, when they ought to be two and four.



"I needed something to help out my daylight, and I have found it in the Cooper-Hewitt lamp. At 11 o'clock I need no extra light. At 2 o'clock I turn on one tube and bring the quality of my light back to 11 o'clock. At 4 o'clock I turn on another tube and am again back to 11 o'clock, and at 6 o'clock I use the third tube and my light all night is equal to 11 o'clock a.m. light.

"With it I have to expose only the short time that I desire, and, by turning it off and on, can control the amount of light with the same accuracy as I may my chemicals used later in developing my plates. For artistic portrait work it is all that I can desire; it is ideal. It is so soft that it does not affect the expression of the face, and yet so powerful actinically that it is equal to daylight.

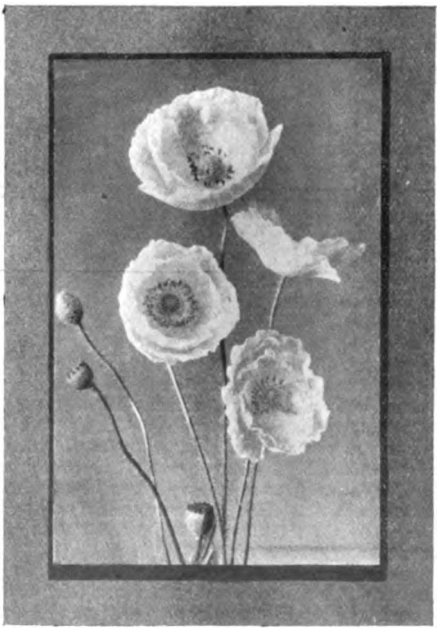
"I am enthusiastic about it, and believe that nothing which has been discovered since the advent of the dry plate, twenty-five years ago, will so revolutionise photography, especially portrait photography, as will this light. It is an epoch-maker.

"The ordinary electric light, incandescent or arc, is apt to be unstable, and it is 'hard.' The flash-light is too gross to be considered. The field of this new light is broad. It can be used to illuminate theatres, because the tubes can be protected for transportation by being placed in boxes, and all you have to do is to attach the electric wires to have your lamps working.

"We have sufficient light in the flash lamp for all practical purposes in theatrical work, but heretofore we have not had a single light which would aid the artistic photographer. As the light is constant in quality and quantity, it is a simple matter to standardise the exposure, and to control that most difficult thing called 'texture.'

"In portraiture, texture is as individual as form, and until now the most expert photographers have been able only to suggest variety in complexional texture, because of the changing light. If one uses the lamp alone without daylight, there is possible the steady lighting of Rembrandt, or the soft, mellow handling of Reynolds, without destroying the characteristic pose, because the light and not the sitter is moved."

Roll Film Hints.—When developing a whole film without dividing the exposures, one end should be attached to a cord passing over a pulley in the ceiling, and having a weight attached to the other end. The film is kept immersed film down by the arrangement shown in the



POPPIES. By Miss Mary Eames.

Digitized by Google

figure, which can be easily made, and should be screwed or clamped to the bench. It consists of two upright pieces, A A, screwed to the baseboard B and the horizontal piece C, the edge against which the back of the film presses being smooth and round.

The weight on the cord should be only heavy enough to pull up the film, which should be attached to the latter with a piece of whalebone, or something that the developer will not attack, passed through two small holes made at the end of the film.

By developing in this way only one hand is required to hold the film, and it is certainly less tiring than the old way of taking one end in each hand, and with a see-saw motion drawing it backwards and forwards through the developer.

One failure met with in films more than plates is uneven development. It occurs more frequently when developing single exposures, and is generally caused by the film curling up. To remedy this a holder should be used. Figs. 2 and 3 show two patterns which can be made out of whalebone. Fig. 2 is most suitable for small films, and is bent into

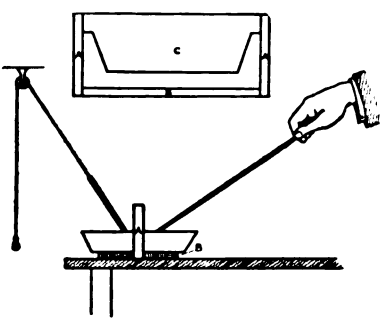
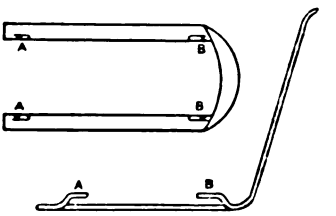


FIG. 1.



FIGS. 2 and 3.

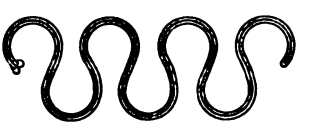


FIG. 4.

shape by plunging in hot water, when the two pieces A and B can be cut and bent up without fear of cracking. Fig. 3 is more suitable for larger sizes, as it keeps the corners flat. Another advantage of using a holder is that it is not necessary to touch the film during development or put the fingers in the developer, thus preventing unsightly pyro stains. To fix the films a deep dish and plenty of solution should be used, so that no ends can project out through the film curling. When fixing a whole spool it should be moved about every few minutes to prevent uneven fixing.

As regards washing, for a whole dozen a special arrangement should be used, such as fig. 4, which is a strip of sheet zinc 2 or 3 in. wide according to the breadth of the band of film, and just half the length of the twelve exposures. A cut half an inch long is made in the centre of one end and the two pieces bent round opposite ways to keep the film in place, as in the figure. By bending the zinc in the shape shown the film is kept in place by its own tendency to curl. It is of course put on the zinc film outwards.—A. W. H. WESTON.

Notes on Chemicals.—*Caustic soda*, known also as sodium hydrate or sodium hydroxide (Germ., Aetznatron; Fr., soude caustique), has the formula NaHO, and closely resembles caustic potash (these Notes, Sept., 1900). But it is much less soluble, and a caustic alkali solution is more quickly made with potash, using 1·4 part instead of 1 part of soda.

Sodium carbonate, dry or anhydrous, is nothing else but sodium carbonate (Na_2CO_3) as distinguished from the "soda carbonate cryst.," which is combined with water, forming crystals. One part of the "dry" = 2·698 (roughly 2⅝) parts of the "cryst." The dry salt is preferred by some, because its strength can be assured by heating it in a porcelain burner over a ring gasburner. Tightly bottled it retains its full strength for months, but readily absorbs moisture if given a chance. The best way of procuring it (for those who cannot purchase it) is by heating sodium bicarbonate in a dish as mentioned above, stirring all the time with a glass rod. The fine powder froths, from evolution of carbon dioxide, and on heating to a low red heat becomes Na_2CO_3. 16·2 parts of anhydrous carbonate dissolve in 100 parts of water, and solution takes place more easily than in the case of the "cryst." carbonate, because heat is given out, whereas it is absorbed when the crystals dissolve.

Soda carbonate cryst., $Na_2CO_3{\cdot}10H_2O$ (Germ., Kohlensauresnatron or Natrium-carbonat; Fr., carbonate de soude), is washing soda, or sal soda of the U.S.A., in its purest state. The purity varies, but the drawback to washing soda is not the slightly lesser content of sodium carbonate—35 per cent., as I have found, instead of 37 per cent. but the alumina and other impurities, including insoluble dirt, which washing soda

Digitized by Google

frequently contains. These give a dirty solution unsuited for a developer; it is best to let the mixture stand and then pour off, as the precipitated matters choke a filter paper. Even the purest carbonate will give a certain precipitate when dissolved in tap water containing lime or magnesium, especially when present as sulphates. Water is best boiled briskly for a few minutes, allowed to cool, and the still warm liquid used for making up the carbonate solution.

Sodium carbonate crystals lose their transparency and become whitish on keeping in a dry place. This is due to loss of water, and causes the carbonate to be stronger. Hence it should be bottled to prevent it giving up its water of crystallisation to the air. 10 oz. of cold water dissolve about 6 oz. 140 gr. of the crystal carbonate.

Sodium bicarbonate, $NaHCO_3$ (Germ., Natriumbicarbonat; Fr., bicarbonate de soude), is the white powder sold by grocers as "carbonate of soda." As it is, it is of no use for a developer, but if boiled in water becomes sodium carbonate, and may be used in this way, reckoning that 100 parts of it give 63 Na_2CO_3, or 168 parts of $Na_2CO_3 \cdot 10H_2O$. If to be used as bicarbonate, *e.g.* in toning bath, it must be dissolved in cold water, 10 oz. of which take up 390 gr. GEORGE E. BROWN.

Preventing Air-Bells.—A reader of *The Photo-Era* gives a method of avoiding the formation of air-bells when flooding the plate with developer. His treatment consists merely in breathing upon the plate with a slow and full exhalation immediately before wetting it with the developer. The cold plate condenses the moisture of the breath, and the slight moistening of the gelatine thus produced enables the developer to cover the film uniformly and instantly. In breathing upon the plate it should be held horizontally and within two or three inches of the mouth, and the whole surface should be covered, edges and corners included. In cold weather and in very warm weather the plate should be breathed over several times: in the first case, because the moisture is, to a large extent, condensed before it reaches the plate; in the second case, because the plate is not cool enough to cause rapid condensation. In moderate weather twice is sufficient.

The Christmas Season brought us many expressions of our readers' goodwill in the shape of photographic cards of greeting. These we would acknowledge, belated as our thanks may appear, assuring our good friends that their good wishes are as heartily reciprocated.

"Photography" Christmas Number (London: Iliffe; 1s.).—Pictorial work by Fredk. H. Evans and Will A. Cadby, and humorous articles by "The Walrus."

The Croydon and County Pictorial (Croydon: Cosmos Publishing Co.; monthly, 3d.).—A handsome periodical of strong local interest. It has its page of "camera chat," wholly sound in its utterances, if somewhat technical. We would see "Opticus" in lighter vein.

A Scheme which promises to link photographers in all parts of the world into a coherent body, interested in each other and in their hobby, is being actively promoted by Fayette J. Clute under the name of the International Photographic Exchange. It affords its members the opportunities of correspondence and of exchanging prints, lantern slides and stereograms. The kind of work offered and desired by each member is advertised in the Exchange's organ, which costs, inclusive of membership, but 30 cents per annum for those not living in the United States. We are glad to see that the scheme is in such capable hands as Mr. Clute's. Those interested should write him at Marye Terrace, San Francisco, Cal., U.S.A.

"The British Journal" Almanac (London: Henry Greenwood & Sons; 1s.) makes its appearance once more without any signs of reduced bulk. Its 1604 pages must surely be a record among shilling technical volumes, photographic or otherwise. The editorial article on "By-paths of Photographic Printing" brings together a number of valuable papers and processes; makers' and other formulæ have been concentrated in one part of the volume, whilst the other features of the Almanac are maintained. Among these, not the least important are everybody's advertisements, as useful to the readers as to the publishers. We are glad to see the Almanac comfortably established for another year as the one indispensable reference volume in the photographic trade.

The Pleasures of Press Photography.—"Philosophers may sing of the troubles of a king," but where is the poet who will apostrophise the press photographer? When he does arrive let him know Messrs. Campbell & Gray, of 17 Cheapside, who, pouring the story of their woes into the ear of the editor of *The Process Year Book*, relate how showers of eggs and soft vegetables have encouraged their retreat from photographing a midnight meat auction by flashlight, and how a criminal lunatic at Broadmoor Asylum disconcerted their photographer by whizzing into his ear, from a distance, a ripe tomato! Messrs. Campbell & Gray claim to hold the record in rapid press work:—seventy-two negatives of motor racing made two hundred miles from town, developed on the course, printed *en route* to London, and seventy-one prints delivered to various offices in the city by 8 o'clock the following morning.

Digitized by Google

Pictorial Photography.—Three notable German works denote the growing interest on the art side of photography among Germans.

Die Photographische Kunst im Jahre 1903 (Halle: W. Knapp; M. 8) reproduces and criticises pictorial photographic work in all countries, and gives as well a number of contributions on photographic technics. The editor, F. Matthies Masuren, has brought together a collection of pictures which represent sound technical work in almost every case. The more advanced school is not conspicuous, but on the other hand it is difficult to find any commonplace work. The handsome volume of 180 pages does credit to editor and printer.

Camera Kunst (Berlin: Gustav Schmidt, and London: Dawbarn & Ward, Ltd.; 4s. 6d. net) is edited by Ernest Juhl, and aims at emphasising the most recent movement in pictorial, whether united or not with what is quite conventionally regarded as "technical excellence." The volume contains some examples of Eduard Steichen's work, and an article by him in which he urges catholicism in regarding this or that as beyond the capabilities of the photographic method.

Perhaps the most useful of this literary trio is Fritz Loescher's *Die Bildnis-Photographie* (Berlin: Gustav Schmidt; M. 4·50). It is a treatise on photographic portraiture from the Daguerreotype to the most advanced workers; of which latter it selects Eduard Steichen as a representative. The text is about equally devoted to critical and technical matters, and is accompanied by a hundred illustrations. Herr Loescher might have included an example each by Crooke, Gill and Craigie—to name three British portraitists as they come into mind—with advantage to the volume. As it is, Fredk. Hollyer and Craig Annan stand together for the English photographers.

Books, etc., Received.—*The Photo-Miniature* (London: Dawbarn & Ward, Ltd.; 6d.).—No. 53 ("Pictorial Principles"), No. 54 ("Outdoor Exposure"). The latter provides a system of exposure for all latitudes. No. 55 ("Architectural Photography").

A German "Facts, Figures" is Schwier's *Deutschen Photographen-Kalendar* (Weimar: K. Schwier), Part I. of which (2 M.) is stocked with formulæ, tables, etc.

FORTHCOMING EXHIBITIONS AND COMPETITIONS.

Particulars of Exhibitions are given when first announced, and again when it is time for entries to close. Will secretaries who wish insertion please mention details below, and note that last day is 12th of each month for publication on 25th? The Editors will feel grateful for the Exhibition catalogue as soon as published.

En.=Entries. Pic.=Pictures. Ex.=Exhibition. G.=Gold Medals. S.=Silver Medals. B.=Bronze Medals. O.C.=Open Classes. Sec.=Secretary.

NOTICE TO EXHIBITORS.

On the suggestion of several readers, the Editors have arranged to send entry forms for the exhibitions or competitions announced month by month on receipt of TWO PENNY STAMPS. ***Their omission to enclose any form or forms should be taken as an indication that at the time of despatch the printed matter was not published. It is hoped that exhibiting readers may find it convenient to obtain the entry forms of all current shows by a single application in this way.***

(1) *Cape Town P.S.*—En., March 13. Pic., March 13 (to the School of Art, Queen Victoria Street, Cape Town). Ex., April 4 to 9. Silver medals and "Cecil Rhodes" gold medal. Sec., A. J. Fuller, P.O. Box 470, Cape Town.

(2) *Birmingham P.S.*—En., Feb. 22. Pic., Feb. 23. Ex., Feb. 27 to March 5. 2 O.C. S. and B. Sec., L. Lloyd, The Hollies, Church Road, Birmingham.

(3) *Brechin P.A.*—En., Feb. 13. Ex., March 5 to 12. Sec., J. Kirk, 1 Infirmary Street, Brechin.

By Professor van Jan.

(4) *Cripplegate P.S.*—En., Feb. 12. Pic., Feb. 19. Ex., Feb. 27 to March 5. 6 O.C. G., S., B. Sec., George H. Depledge, 17 Hazeldene Road, Goodmayes, Chadwell, Essex.

(5) *Scottish National Photographic Salon.*—En. and Pic., Feb. 4. Ex., Feb. 13 to 27. Sec., Alex. Mackenzie, 42 Scott Street, Perth.

(6) *Larkhall C.C.*—Feb. Sec., A. Thomson, High Marshall Street, Larkhall.

(7) *Luna.*—£240 in prizes for prints on Luna paper or silk. Last day, Oct. 10. Lucien Allègre & Co., 59A New Oxford Street, London.

Digitized by Google

Trade

Manufacturers sending apparatus for examination and notice should state distinctly whether, and when, they wish it returned.

NOTICE.

Copies of the notices in these columns reach the firms concerned on the day of publication (26th January). Hence the mention of *The Photogram* for February when addressing enquiries will at once indicate the exact article in regard to which information is sought.

Catalogues, Price Lists and Descriptive Pamphlets.—*Ross, Ltd.*, 111 New Bond Street. "A" list of lenses and cameras, containing some fine specimens of work by the Homocentric lens.

"The Use of Pyrogallic Acid," by Chapman Jones, is the title of a pamphlet sent free by Messrs. A. & M. Zimmermann, of 3 Lloyd's Avenue, E.C., or obtainable from photographic dealers.

Babajee Sakharam, Esuf Buildings, Bombay, India.—A remarkably complete list of nearly 350 pages, evidencing the fulness and up-to-dateness of the firm's stock. A collection of formulæ is included, and there is a valuable introductory article on modern printing processes.

New Rungs in the Watkins Ladder, by which the Watkins Meter Company promise the speedy ascent of the photographic tyro to proficiency, are a Print Meter, a U.S. Dial for Bee Meters (for those whose lenses are marked on the uniform system), and a Queen Bee Meter. These articles we shall review as they reach us.

Inks for Titles.—For naming lantern slides, writing on dark mounts, or for inscribing numbers or titles on negatives, two inks are sold by Mr. Tylar, of High Street, Aston, Birmingham, at 1s. per bottle (1s. 2d. post free). The brands are "white" and "aluminium bronze," and used on an ordinary steel pen we have found them to answer their purpose well.

Luna.—Messrs. Lucien Allègre & Co., 59A New Oxford Street, W.C., will shortly open a permanent exhibition of pictures on Luna paper at the Regent Gallery, 99 Regent Street, W. They will be glad to receive prints from users of Luna for inclusion in this exhibition. Luna, we would also say, is now made of a greater rapidity than heretofore. Our notes of the new issue must stand over until the tests in hand are completed.

Users of Busch lenses should note the offer of the Busch Camera Company, 35 Charles Street, Hatton Garden, E.C., to purchase prints or negatives made with Busch lenses. The subjects should be those suitable for advertisement purposes, and the purchase secures to the Busch Company the rights of reproduction. In submitting work to the company full particulars should be given as to the subject of the picture and the particular kind of Busch lens with which it was taken, with details of aperture and exposure.

Porcelaine S.C.P. is a new variety of Messrs. Wellington & Ward's well known S.C.P., which has a porcelain-like surface, with tooth enough to take a pencil, but smooth enough to serve excellently for printing from negatives for process reproduction. The paper support is pure white, and the clean, vigorous prints given by the new brand fit it admirably for either amateurs' or professionals' use. The paper is issued at the same prices as the ordinary S.C.P., viz., 1s. per packet of twenty-four quarter-plate pieces, or of twelve post cards.

Art Velox (Messrs. John J. Griffin & Sons) is a new brand of the well known gaslight paper which deserves serious notice from photographers in that it yields, from negatives of normal contrast, prints of delicate gradation. The reputation of gaslight papers among many people is, no doubt, that of a saviour of flat negatives, the pluck of gaslight prints having been emphasised as one of the prominent advantages of this kind of paper. In the case of "Art Velox" the contrast is just about the same as one obtains on a rapid bromide paper, and this property, in conjunction with the peculiar albumen-like surface of the paper, recommends it specially to the worker with pictorial ambitions. In manipulation it in no wise differs from the other varieties of Velox.

The Word "Tabloid."—An important judgment in favor of Messrs. Burroughs Wellcome has been given by Mr. Justice Byrne, in an action brought against certain retail chemists who supplied compressed drugs of manufacture other than that of Messrs. Burroughs Wellcome, when asked for "tabloid" or "tabloids." The photographic importance of the trade mark "tabloid" did not arise in the case, although it might easily have done so, but the judgment for the defendants in every point of the action will be the strongest deterrent to would-be infringers of the trade mark. As the learned judge pointed out, the fact that use is made of the word tabloid in common speech and in the press does not interfere with Messrs. Burroughs Wellcome's trade rights. Counsel for the defendants ingeniously argued that Messrs. Burroughs Wellcome sought to rob the English language by appropriating such a word as tabloid, to which his lordship retorted that they had made a gift to the language, while reserving a special use of it to themselves.

Fixing-Bath Cartridges in convenient form are prepared by Mr. J. E. Lockyer, of 244 Evelyn Street, Deptford, at the remarkably moderate prices of 1½d., 2½d., and 3d. The 3d. cartridge contains material for three separate fixing baths, each of 10 oz. Mr. Lockyer describes his product as "concentrated acid hypo fixer," a term which has been laid open to suspicion by certain "authorities," who would have us believe that the acid fixing bath is an evil thing, inevitably leading to stained or impermanent negatives. That such wholesale condemnation is unjustified we very strongly hold, for we have used an acid bath for years past. The preparation put forward by Mr. Lockyer we find to be rightly compounded: it dissolves to a clear mixture, and works without showing any of these signs of incipient decomposition which may, in the case of a wrongly constituted bath, lead to undesirable results.

We should mention also that Mr. Lockyer is now issuing 6d. trial packets of his ready-made developers, toners, etc., a movement on his part which we hope will bring his products before a new *clientèle*, and should suit those who purchase in small quantities.

The Premo Film Pack (Kodak, Ltd., 43 Clerkenwell Road, London, E.C.) provides for the daylight changing of cut films without anything in the nature of machinery. In fact, each film pack is the changer, and the only addition required when using it on an ordinary plate camera is an adapter, or light-tight case in which to carry it. From each film pack project thirteen paper tabs, the first protecting film No. 1 from daylight; on pulling it out as far as it will come, and tearing off the paper, the first film is ready for exposure. To remove it and bring the second film into place, the tab labelled 1 is pulled out and in like manner torn off. Proceeding in this very simple manner all twelve films are exposed and transferred automatically to a light-tight compartment in the back of the pack, where all are found, on opening the pack in the dark room, properly numbered and in order. The device has worked most satisfactorily in our hands, and we cannot refrain from admiring the ingenuity of the system on which it works. To the user of a glass plate camera it will appeal as a certain and inexpensive means of employing films when on tour without in any way interfering with the proper purpose of the camera. The price of the film pack (one dozen quarter-plate exposures) is 3s.; of the adapter, 4s. 3d. The films, we would add, are the orthochromatic non-curling brand now favorably associated with the firm of Kodak, Ltd.

A Notable Studio Camera. — Messrs. Sanders & Crowhurst, of 71 Shaftesbury Avenue, London, recently afforded us an opportunity of inspecting a large studio camera constructed by them to meet the requirements of a Colonial customer. The outfit is noteworthy for the way in which a heavy camera — the instrument takes 20×20 plates and weighs 3¾ cwt.—can be manipulated with very slight muscular exertion. The chief movement from this point of view is that which raises and lowers the camera vertically. The whole weight is counterpoised, and the gear raising the ponderous camera is actuated with scarcely noticeable exertion. Tilting and focussing movements are of the same degree of smoothness. Another useful feature is the low point of view which can be taken. This is partly due to the castors, which are sunk into the legs of the tripod, so that the camera baseboard can be lowered to within 3 feet of the ground. Sag in the bellows Messrs. Sanders & Crowhurst prevent by the introduction of loose wedge-shaped supporting pieces, which move freely as the camera is focussed, but are not liable to damage the bellows. The whole outfit is produced in exceedingly handsome and solid style, and should be a source of mutual congratulations between photographer and maker.

Wellcome's "Photographic Exposure Record and Diary, 1904."—It is difficult to speak highly enough of the

Digitized by Google

pocket volume which Messrs. Burroughs Wellcome issue year by year for the modest shilling. The best testimony we could give would be an ocular one—the worn and thumbed copy which has done us good service in the year which has passed. We take the diary for 1904 into our possession equally certain that we shall find it of daily use in matters personal and photographic. Wellcome's Diary is typical of the "Tabloid." Printed on thin tough paper, the volume is of the slimmest, and in no way inconvenient in the breast pocket. The contents include, as before, formulæ and directions for practically every common photographic operation, and a very complete guide to exposure drawn up in conjunction with the calculator on the inside back cover of the book, by which the exposure for all subjects and with any plate is indicated without any arithmetical exercise whatever. The notes on development, toning, etc., are singularly explicit, and the Diary might almost serve to instruct the absolute beginner in the first stages of photographic practice.

A New Gaslight Paper.—A distinct addition to the number of printing papers already at the disposal of the worker who must expose and print without entombing himself in the dark room appears as a new variety of the Leto brand (Leto Photo Materials Co., 9 Rangoon Street, London, E.C.). The paper is rapid—twice or three times as rapid as several standard brands which we used in comparison with it, but it, despite this fact, showed no sign of undue liability to fog in the weak white light in which it was developed. On the other hand, the claim of the makers for greater freedom from fog seemed well substantiated by the behaviour of the paper in our hands. The new variety of Leto is supplied as "matt" or "rough matt," the surface of the emulsion in each case being of a hard character, not readily damaged in the ordinary treatment received by a batch of prints. Users of gaslight papers will undoubtedly be satisfied with the new paper, which is supplied in the usual shilling packets.

The Civil Service Motor and Cycle Agency, Ltd., with which is associated the well known photographic firm the Service Photographic Co., has declared a dividend of 5 per cent. on its ordinary shares.

The Awards in the Wallsgrove Competition have been made, and six amateur workers rewarded in coin as well as knowledge for their experiments with the Wallsgrove chemicals.

The Illingworth Bromide Competition, for the best prints on the free samples of Messrs. Illingworth's new bromide paper, recently advertised in our pages, has closed, and the prize of £5 awarded to Mr. Herbert Bairstow of Halifax. Five extra prizes of £1 each were also awarded.

The Velox Exposure Gauge.—Messrs. Griffin write to point out that the Velox gauge is issued by them for the purpose of giving the time when printing by contact on Velox paper. We should have made this fact more prominent when drawing attention, last month, to the use of the gauge in making enlargements on bromide paper.

New Businesses, Changes of Address, etc.—*Messrs. Rae Bros.*, photographic dealers and opticians, 134 St. Vincent Street, Glasgow, have added another branch to their business at 38 Hamilton Street, Greenock.

New Photographic Dealers.—*Lindsay's, Ltd.*, 489 Kingsland Road, N.

Wedlake & Wilson, 13 Grand Parade, Lea Bridge Road, Leyton, E.

The Policy of "No Entry Fees."

DEAR SIRS AND MADAM,—The note in *The Photogram* for December seems to demand a reply. The balance sheet of the Rotherham exhibition is now complete, and I am happy to say that from £6 to £7 will remain in hand. The policy of "no entry fees" was applied to the framed print classes—if a broad expression may be allowed—on the advice of a well known exhibitor of high standing. With his view of the matter, viz., that after a photographer has prepared his picture, framed it, and defrayed all carriage charges to and from an exhibition, the payment of an entrance fee of 1s. or more is an addition that might well be disregarded by the promoters, my council is in full agreement. Four years' experience of the policy has amply justified its adoption. The number and value of our awards has been maintained, and will compare with those of other ventures where fees are the rule.—Yours truly,

H. C. HEMMINGWAY,
Hon. Sec. of The Rotherham Photographic Society.

To Practical Workers.—*The editors are always in search of new contributors to* The Photogram. *Articles are preferred in short series with five or six illustrations, but in all cases the editors prefer to consider suggestions for such series rather than MSS. The status of the writers does not signify in the least, supposing their contributions are on practical topics, are told out of their own experience, and expressed without waste of words.*

BE BRIEF!—*We reserve the right of condensing all correspondence, but undertake to leave the meaning intact.*

Personalities barred. Whenever a man's opinions are attacked, with mention of the man's name, we wait until a proof can be sent, and the attack and reply published together.

Anonymous letters are strongly objected to, and those which are not ACCOMPANIED *by name and address of writer, for our own information, go into the W.P.B.*

The Retoucher's Knife.

DEAR SIRS AND MADAM,—I have used the scalpel (exactly as described by Mr. Healey) for many years, and have also an assortment of retoucher's knives, scrapers, planers and gravers, including Mr. T. H. Vickers' instrument. But amongst them all there is none so useful as the scalpel mentioned above, and it is certainly no makeshift. I have done (*commercially*) all kinds of work, from the alteration of visage and draperies to the introduction of plants, gardens, furniture, masonry, water, grass land, rocks, reeds, animals, etc., besides all kinds of obliterations; and it is so quickly done that it is more profitable to the photographer than double printing, especially for quantity.

Mr. Vickers' knife when properly set (which mine when purchased new was not) is very useful to save the wear of the scalpel, when there is much planing to be done, also for scraping away matt varnish, etc.; and I would advise all retouchers to possess one, especially as it is very useful in working up enlargements, but it is not fairly comparable with a properly ground surgeon's scalpel for nearly all the work required of an ordinary portrait retoucher.—Yours truly,

ARTHUR WHITING.

133 Streatham High Road, S.W.

PRINCIPAL CONTENTS.

Mounting the Exhibition Print. By Fredk. H. Evans.
Moonlight Photography.
Stereoscopy—Truth from Lies.
Six-Plate Promenades. By H. G. Springall.
Exposure by Rule. By H. Hands.
Japan and Pictorial Photography.
The Portrait and the Studio.
From my Note-Book. By Alexander Mackie.
Picture Post Cards—Post Card Competition.
What's What.
Forthcoming Exhibitions and Competitions.
Trade. Correspondence.

The Process Photogram

contains the whole of *The Photogram plus* the following articles and notes relating to photo-mechanical processes:—

Tri-color Chaos.
Demonstrating the Half-tone Dot.
Modified Collotype for Beginners. By H. G. M. Barstow.
"The Process Year Book, 1903-4."
The Students' Supper at Bolt Court.
The Functions of Tri-color Filters. By A. J. Bull and A. C. Jolley.
Moistening the Plate in Rapid Collotype Printing.
Current Topics.

Digitized by Google

Digitized by Google

PORTRAIT BY ADELAIDE HANSCOM.

MOUNTING THE EXHIBITION PRINT.

BY FREDK. H. EVANS.

The above reproduction is to be cut out and mounted as directed in Mr. Evans' article.

Digitized by Google

THE PHOTOGRAM

VOL. XI. MARCH, 1904. No. 123.

BED-TIME. *By Newton Gibson.*
("Candlelight Photography," p. 67.)

Digitized by Google

MOUNTING THE EXHIBITION PRINT.

By Fredk. H. Evans.

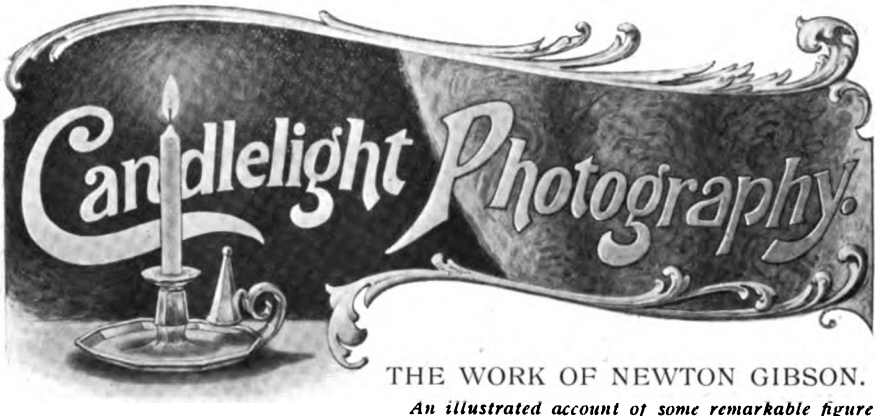
This month's exercise.—Mounting Papers:—For outer border, Lindenmeyr's Court Grey (this month's covers): for inner border, Melton Mordore, last month's covers.

FOR this month we have a somewhat similar study to that of last month, in that it is a portrait study and on a dark background.

The bottom mount will be of the Court Grey forming the covers of this month's issue. When the portrait has been cut out it has first to be mounted on the Mordore paper of the February issue, and trimmed to the following margins:—$\frac{7}{16}$ in. at top, $\frac{1}{2}$ in. at sides, and $\frac{3}{4}$ in. at foot. This has then to be stuck, in the manner before described, on to one of the covers of this month, carefully observing that the relative position for margins closely accords with those shown in the reproduction.

I have chosen these simple treatments to commence with, as covers have to accumulate before we can deal with more complex mounting. And when I say complex mounting, I do not wish it to be inferred that this style of mounting exists only for great complication and number of papers. It is, of course, the first tendency of all who start with it to be as elaborate as possible, but it will soon be felt that the best effects are got by the simplest means, and though I shall give some examples later on of complex mountings, it will be seen that the effect is not necessarily a complex one, though the number of papers may be considerable; it is in the way they are used, the quality of the design, and the colors chosen, that the feeling of simplicity or complexity arises. The fewer the colors used and the less the number of papers used the better. Color *as* color must be avoided; the effect must be gained by proper proportional spacing of the margins, avoiding a worrying number of lines, or a repetition of equal-sized margins—always a bad effect.

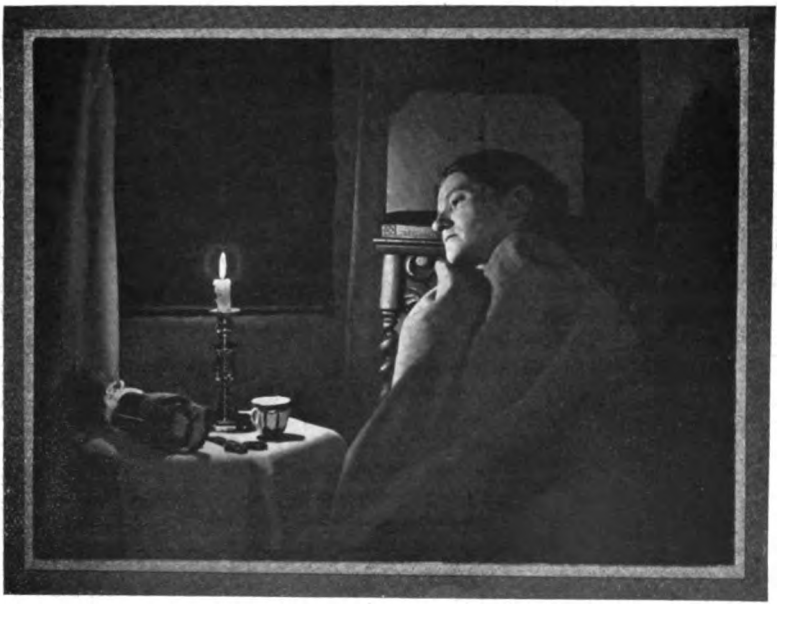
Digitized by Google



THE WORK OF NEWTON GIBSON.

An illustrated account of some remarkable figure studies made with an artificial light invented by Mr. Gibson. Specially reported for The Photogram *by Percy Brotherton, Secretary of the Burnley Camera Club. Mr. Gibson is seen in "The Lesson."*

JUST on the Tyke side of the Yorkshire and East Lancashire border lies Hebden Bridge, in a district noted for its valleys and railway mishaps. The town itself, though surrounded by some charming scenery and in the midst of a district of historical and legendary interest, is anything but inviting, the streets forming terraces on the hillside. Despite, however, its urban unattractiveness or the prettiness of the immediate locality, Hebden Bridge has gained some notability in the photographic world, particularly during the past twelve months, on account of the remarkable candlelight studies which a well known inhabitant has succeeded in obtaining. In the accompanying pages are reproduced six or eight examples, and the first peculiarity which strikes one is that there is a mysterious *central light*, from which *all shadows diverge*—so different from the one-direction and dummy-



HARDLY EARNED. By Newton Gibson.

Digitized by Google

candle effects we have all seen. Conjectures have been many as to how it is done, and Mr. Gibson has been inundated with requests to give the photographic world the benefit of his discovery and methods.

On behalf of *The Photogram* readers, I almost took the New Year in at Hebden Bridge, finding Mr. Newton Gibson at Primrose Cottage, situated in one of the terraces alluded to. Mr. Gibson is a most genial and precise person, an elderly man with a Ruskin-like profile; but, alas for my motives, too chary of his secret to part with it there and then. And yet this is not to be wondered at, for the invention of this particular illuminant for his candlelight effects has cost him nearly three years of his spare time, and much worry and anxiety during ceaseless experimenting. During the past year, however, Mr. Gibson believes he has perfected the "lamp," as he calls it; and though he does all his work as a hobby, and merely a hobby, he hesitates to relinquish his secret. If divulgence would simply be a means of giving to photographers generally a most fascinating and effective new sphere of work, Mr. Gibson would tell all, but he naturally declines at playing into the hands of those to whom photography is a business pure and simple. His correspondence gives abundant proof that his idea is much sought after.

THE SICK BIRD. By Newton Gibson.

Here is how a prominent year book comments on Mr. Gibson's pictures: "The figure studies by candlelight are extremely clever, and it has long been a mystery how these are made." Mr. Gibson's only mystery is as to the construction of his "candle-lamp." Otherwise his means are quite ordinary. He works with a Darlot portrait lens of 9-in. focus, using the third stop, giving two seconds exposure only, and the lights used are subdued daylight and the magnesium lamp. All his material is commonplace, and any photographer, with the lamp he has invented, could do the same (and many, of course, far superior) work. These illustrations, which are selected from about a score, are a varied and striking example of his work, and demonstrate forcibly what may be done by this new method. There are illimitable possibilities in it. It has been described as unpictorial, but what might it not be able to accomplish with suitable models and surroundings? In striking picture post card series alone, there is a rich field for its adoption.

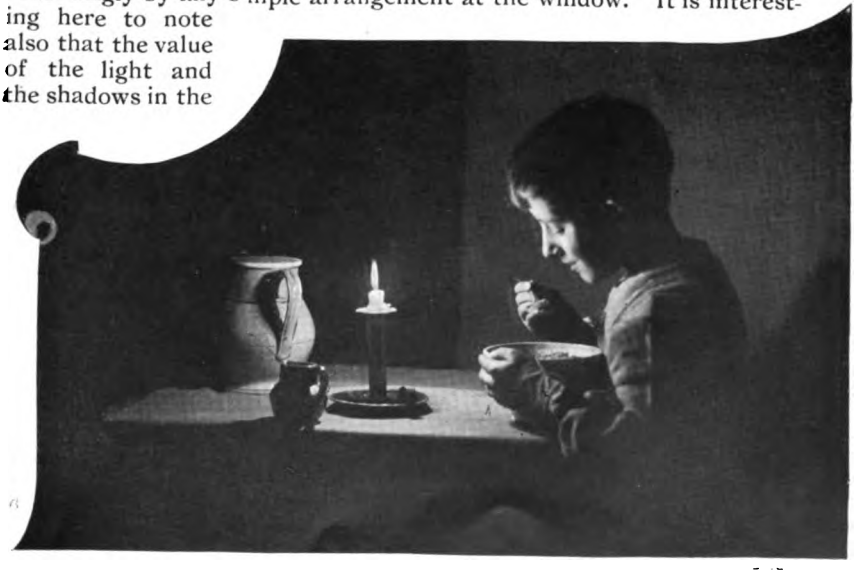
EVENING PRAYER. By Newton Gibson.

Digitized by Google

The accompanying pictures are admittedly remarkable. There is a strong light on all subjects turned *towards* the illumination, and yet on the opposite parts there is not that blackness hitherto associated with most attempts at candlelight or similar relief effects. Though strong, the lighting is delicately pleasing by its softness, and the shadows are neither hard nor harsh. This effect is gained by the use of sufficient daylight (not sunlight) from an ordinary window, to relieve the darker portions of the subject, and yet *not enough to interfere with the artificial light* used. The light seen in all the illustrations is not faked in. The illumination is exactly where the camera shows it to be, because, as will be seen, the shadows all recede from it, and in their natural proportions and value. Moreover, there is no after-faking. I saw several of Mr. Gibson's negatives, which were absolutely untouched. At the same time, of course, the use of two or even more negatives admits of a great extension to the possibilities of the discovery, and Mr. Gibson has, as a matter of fact, built up one or two compositions in this way. Our illustrations are, however, from straightforward prints.

THE LESSON. By Newton Gibson.

On focussing on the ground glass, it is noted whether the "candle" throws shadows. If not, the daylight is too strong, and it is shielded accordingly by any simple arrangement at the window. It is interesting here to note also that the value of the light and the shadows in the



SUPPER TIME. By Newton Gibson.

Digitized by Google

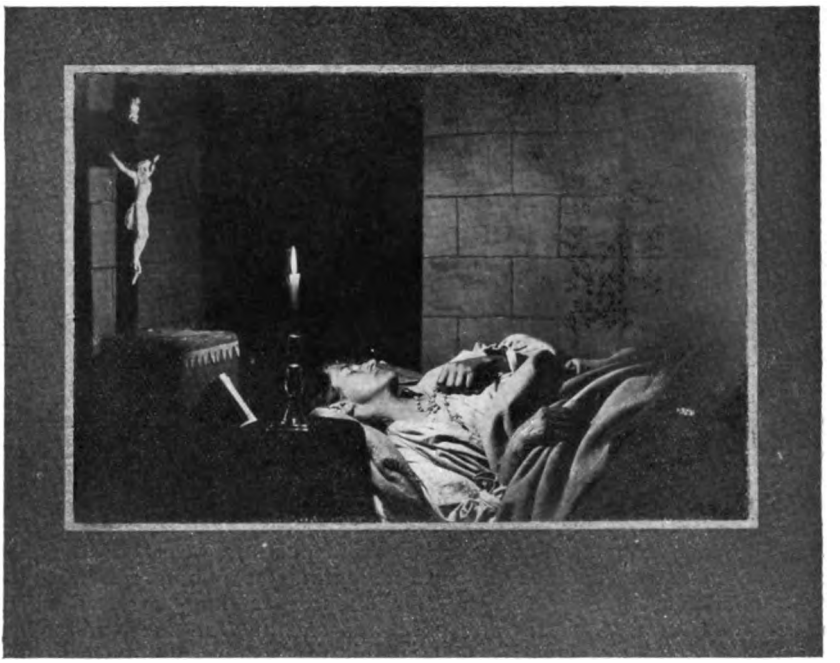
negative and print exactly correspond to the image as thrown on the focussing screen. Then the exposure is made, and the brevity of this is one element of the method which adds to its value and utility. Working at *f*/8 or *f*/11 on a special rapid plate—no particular brand—Mr. Gibson can get all he desires in two seconds, a circumstance of no little importance where posed figures are concerned. A fact worth remembering, too, is that there is none of the ghastliness of the ordinary flashlight result. The models show no trace of facial rigidity usually associated with the flare of magnesium. The illustrations entitled "Bed-Time," and "Hardly Earned" (Mr. Gibson's favorite), prove this perhaps more than the rest, for the models are almost looking at the light. The admixture of the proper amount of daylight is an item demanding practice and experience.

Like hundreds of others who did not know how it was done, Mr. J. T. Ashby, in reviewing some of Mr. Gibson's studies, made a guess. He said that the illuminant was "an acetylene flame shaped like a candle." Mr. Gibson will admit that all he does may be possible by the use of acetylene, but his discovery is a *magnesium lamp*—though whether for wire or powder he would not say. He is able to get any length of candle, as will be seen by the prints chosen for this article, and it matters not how the candle is tilted. Again, there is always a semblance of wick, and the trickling of the hot wax. Exposure of a special rapid plate to a magnesium light, directly in front of the lens, would, one expects, fog any plate, and that this lamp *does not fog*, and yet radiates so strongly, is part of the secret, and is all in the construction of the "lamp." This mysterious lamp can be adapted to anything—that is, to represent not only candles but matches and tapers, and is also adaptable to the interiors of lanterns. Its illuminating power at present is a radius of about three feet.

Mr. Gibson is limited in his models practically to his wife and son, the latter a clever little lad of nine—see him vigorously lathering a non-hirsute chin!—whose enthusiasm in the secret is as keen as his father's. Moreover, he is insusceptible to "pumping," as I found out! Sometimes Mr. Gibson works, not in half-plate, but in semi-quarter-plate, with a view to enlargement, yet in *no case* is any special

THE LATHERED CHIN. By Newton Gibson.

Digitized by Google

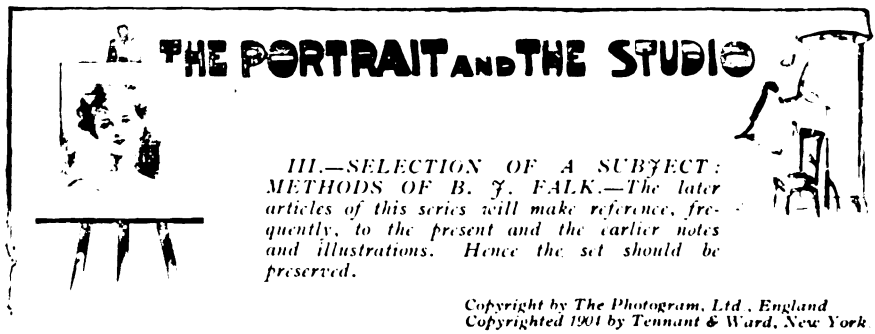


"THE NIGHT COMETH." By Newton Gibson.

apparatus necessary beyond — the lamp. And here it is we all stop, though "It is quite simple," says Mr. Gibson. He has now perfected it, and one can say without exaggeration that it lends itself to hundreds of subjects which, without it, would be failures or indifferent successes, or could not be attempted at all. Obscurity is not obtained by fuzziness. Undesirable features are kept back, by being thrown, not out of focus, but out of the fulness of the light of this mysterious candle. But a whisper! Mr. Gibson has promised to divulge the secret during the year, and *The Photogram* readers are to know it.

THE END. By Newton Gibson.

Digitized by Google



III.—SELECTION OF A SUBJECT: METHODS OF B. J. FALK.—The later articles of this series will make reference, frequently, to the present and the earlier notes and illustrations. Hence the set should be preserved.

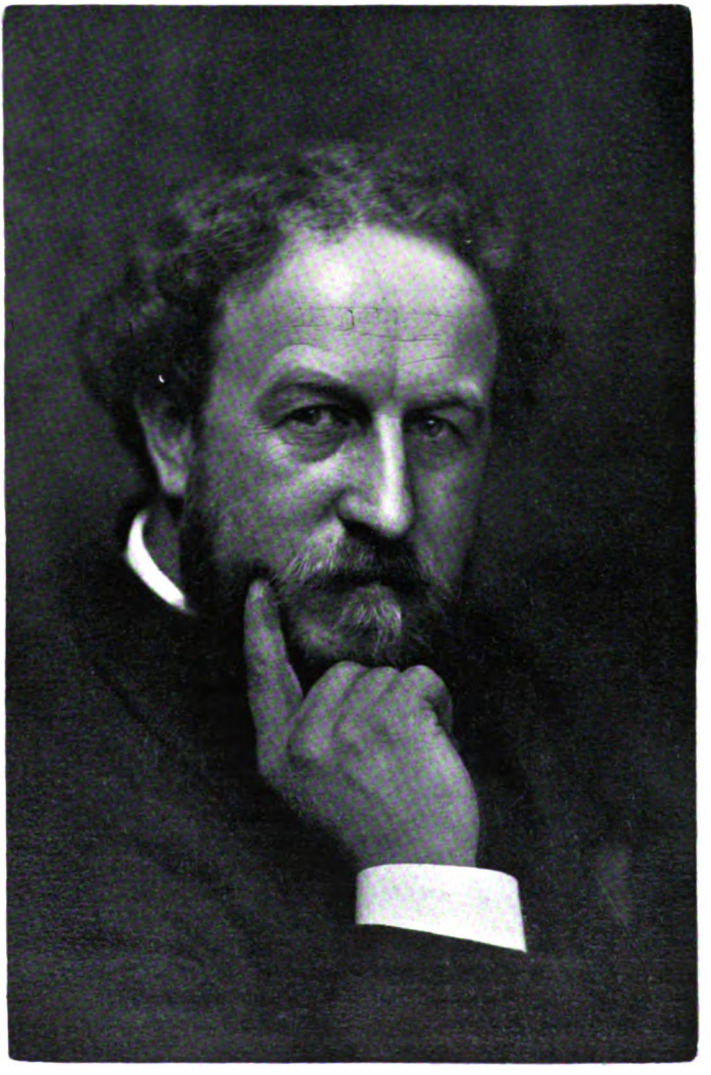
Copyright by The Photogram, Ltd., England
Copyrighted 1901 by Tennant & Ward, New York

In selecting a subject to place before photographers I was swayed by the idea that true comparison could only be made if *the same sitter*, in the same costume (or, in other words, the same problem) were submitted to all. The only sitter conveniently available for both sides of the Atlantic was the one represented. The principal difficulties of the subject (dealing with the face only) are a high brow with a pallid patch bleached by the hat-band; eyes small, close together, unequal in shape and size, and with drooping lids; eyebrows blonde, and beard of unequally blonde patches, with tendency in certain lightings to photograph in a tone indistinguishable from that of the skin; a nose tending to show a broad parallel-sided line of light in any pose approaching full face, and cheeks showing the results of a fairly well-fed but too sedentary life, with far too little exercise to keep the face in "condition." It may be well to note these points and to see, month by month, how each photographer has dealt with them.

Mr. Falk, round and rosy, essentially brisk and cheery, shows at once the personality to which he owes his great success with sitters; but it is difficult to realise that this young-looking man with the light springy step and "the smile that won't come off" is one of the "fathers of American photography." It was a bold venture when he moved an old-established and successful business to the fifteenth floor of the Waldorf-Astoria, "the world's greatest caravansery," with the enormous expenses attached to that luxurious building, but the experiment seems to have been successful. The fifteenth-floor reception rooms were illustrated in these pages in 1901 (p. 161). Above them, up a magnificent flight of steps, is the studio, with about thirty-five feet by twenty-five feet of operating space, and great recesses for backgrounds and accessories, which are provided in large quantities and freely used. There is only one large light, about fifteen feet square, facing northward, commencing at about six feet from the floor, and running to about sixteen feet high at the ridge. Americans have clearer skies than British folk, and work their sitters further from the light, which is generally smaller and more concentrated than in British practice. Mr. Falk's light has ribbed glass, with a set of white spring-roller blinds, running from top and from bottom, and another set completely opaque.

Mr. Falk still quotes for portraits by the dozen, and frankly admits that he likes "good old-fashioned pictures, in which the sitters can be recognised by their friends." He believes in letting the sitter take his own pose, and at the beginning of our sitting said—"Look around and see which of these chairs seems most comfortable; then we'll have a chat." The chair I selected happened to stand on a revolving, castored platform, and was at once moved to the position already selected in the stream of light. The blinds had been previously closed, to give a small, concentrated lighting. A suggestion to

Digitized by Google



The Falk Studio, The Waldorf Astoria, N.Y.

By B. J. Falk. January, 1904.

Digitized by Google

rest the elbow on the chair's arm, and the chin on the hand, a few moves of the camera to various positions, and the first exposure was made. Then the platform was moved to give a new lighting and background, and a second exposure. A little running chat about photographic friends in London was rippling all the time; once, only, the blinds were changed to give a broader lighting, and the whole sitting, of half a dozen poses and plates, was completed very rapidly.

The treatment of the results was characteristic of the man. When I called to see prints, Mr. Falk produced two only. "Here," he said, "is a study, 'The Professor,' and here is a portrait that I consider satisfactory as a likeness. At any rate it is as good as I can make just now. The others are not so good, so you must not see them. In the portrait I tried to suggest a man who thinks—reflects; and I hope it is fairly successful." This portrait is the subject of reproduction on page 73, and needs, I think, no detailed criticism. It will be the subject of reference in certain later chapters of this series. H. SNOWDEN WARD.

NIGHT PHOTOGRAPHY.

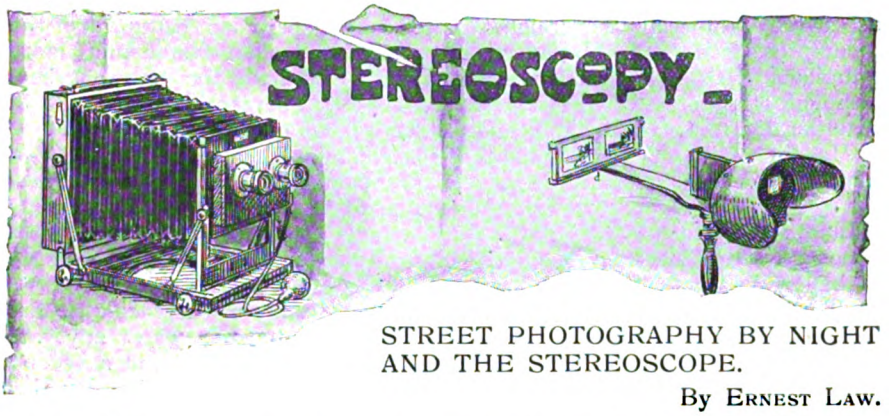
By W. C. Motteram.

AMONG the photographers who have fallen under the spell of night photography, first woven for their artistic joy and physical discomfort by Paul Martin, Mr. W. C. Motteram of Philadelphia is little known in this country. The two examples of his work, reproduced on pp. 79 and 81, show how he uses the opportunities which a Philadelphian winter affords. And they both show also the special incentive to photography of a snow-clad street under the electric arcs, as well as the peculiar technical obstacles to be overcome. No photographer with an eye for the picturesque can have passed through a wet or snowy winter without receiving that same incentive. As Mr. Kelsey showed, by some examples in *The Photogram* a year or so ago, the most ordinary street becomes a fairyland of opportunity as soon as gas or electric lamps are its source of illumination. In most cases the technical difficulties are not so great as those surmounted by Mr. Motteram in our two examples. Both negatives were taken during a snowstorm between 9 and 11 o'clock at night. The position of the camera facing a row of arc lights invited halation and false images. But the latter are absent and the former present to no greater an extent than seems natural. The data in regard to the two negatives are as follows:—Both were taken with a medium stop on Seed "Non-halation" plates. Exposures 20 and 12 minutes respectively.

A heavy snowstorm was blowing the whole of the evening: its effect is specially noticeable in the soft haze of the lights in the first picture. Truly, night photography exacts penalties from its enthusiasts, and there is some truth in the sentence of a recent article, that the worker in this sphere must have "the nerve of a prize fighter, the patience of Job, and the temper of an angel."

A set of slides, with description, presenting night photography in a number of different aspects, forms one of a series of lectures issued by The Photogram *to photographic societies. Night pictures are seen at their best as lantern slides, which reproduce the brilliance of the actual scene as no reproduction or print can do. The set includes the work of Paul Martin, Ellis Kelsey, Ernest Law, Dr. Grün, and others: the lecture, describing practical methods, being by Mr. Kelsey.*

Digitized by Google



STREET PHOTOGRAPHY BY NIGHT AND THE STEREOSCOPE.

By Ernest Law.

In writing these notes of my experience in stereoscopic night photography, my chief object is to call the attention of those who are interested, or may become interested, in the subject, to the possibility of introducing figures into night views of street scenes with very great advantage to the scenes depicted. Night pictures which present to us empty streets and squares have, to my mind, an uninteresting and—to those who are not accustomed to be abroad in the early hours of the morning—an unfamiliar appearance. The introduction of figures or incident greatly adds to this pictorial effect, although it also adds to the difficulties of securing a successful negative.

It is very desirable, if not absolutely necessary, that the would-be night photographer be equipped with a large aperture lens, as the length of exposure is, of course, thereby shortened. These lenses, however, have also some disadvantages, in the way of giving on occasion false images and halos. Further, the stereoscopic form of photogram is the one which, in my opinion, best repays the photographer of night scenes.

My equipment consists of a half-plate camera fitted with a stereoscopic

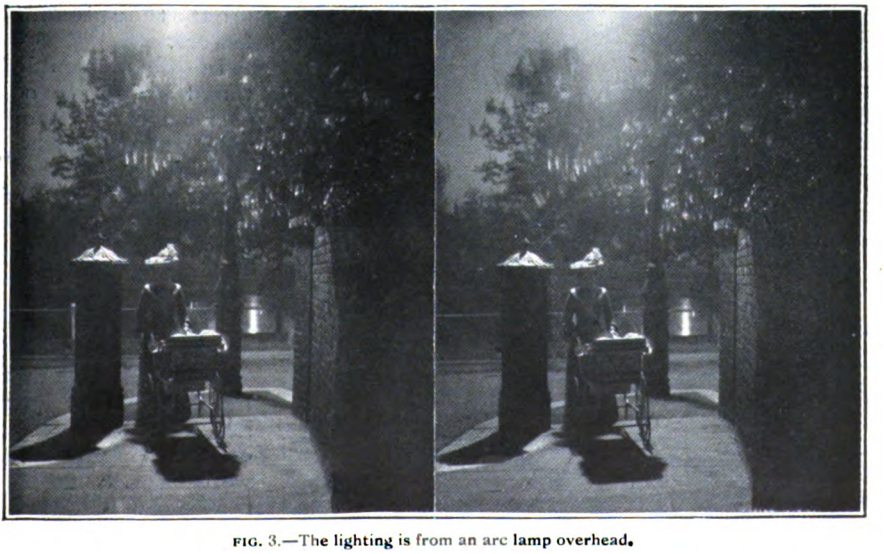


FIG. 3.—The lighting is from an arc lamp overhead.

Digitized by Google

division and a pair of 5-in. anastigmatic lenses working at *f* 6, and I use, as a rule, Imperial "sovereign" plates, my experience being that the moderate speed brands produce better negatives than faster and more granular plates. It is presumably an advantage to have the plates backed, although I cannot say that I have found any very perceptible difference in results therefrom. The examples given were taken on unbacked plates.

In the photographing of night scenes, including figures, there are two main methods of procedure. One can press one's friends into the service for the principal figures, or take advantage of any of the public who may willingly (or unconsciously) remain still enough for a somewhat prolonged exposure, and then give an exposure of from ten to sixty seconds, or more if the sky be dark.

The other method—which is particularly desirable where electric arc lamps are included in the view—is to give an instantaneous, or at any rate short exposure at dusk before the electric lamps are lighted, and a second exposure of about equal duration after the lighting of the lamps. By this second method there must of necessity be a certain amount of false lighting, although, if the subject be chosen with an eye to this fact, the error may be reduced to a negligible quantity. There is also, in using this second method, one point that must always be borne in mind, and that is, that the figures, carts or other incident must not be in line with, or covering, any distant lamp or source of light—otherwise a "ghost" of such light will appear through the figures. Stationary lights can easily be avoided by a little care and observation, but tram-cars, bicycles and other vehicles bearing lights are the most troublesome factors.

FIG. 1.—A wet night in Suburban London.

In illustration of this, I had on one occasion a very memorable example, when an otherwise most picturesque subject of two brewer's carts and horses at a water-trough was utterly spoilt by "ghost." Having given a short exposure to the group, and having seen that the principal arc-lamp and a secondary one on the opposite side were clear, I had not reckoned with the passing lights of vehicles

Digitized by Google

and of some distant shops which were not yet lighted up. The result was that when I made my second exposure—after at least half an hour's patient waiting, and putting up with a considerable amount of "chaff"—there were three or four lights right through the beer-barrels! In an ordinary photogram these might perhaps have been "retouched" out, but stereoscopy will not admit of much tampering with the negative or print.

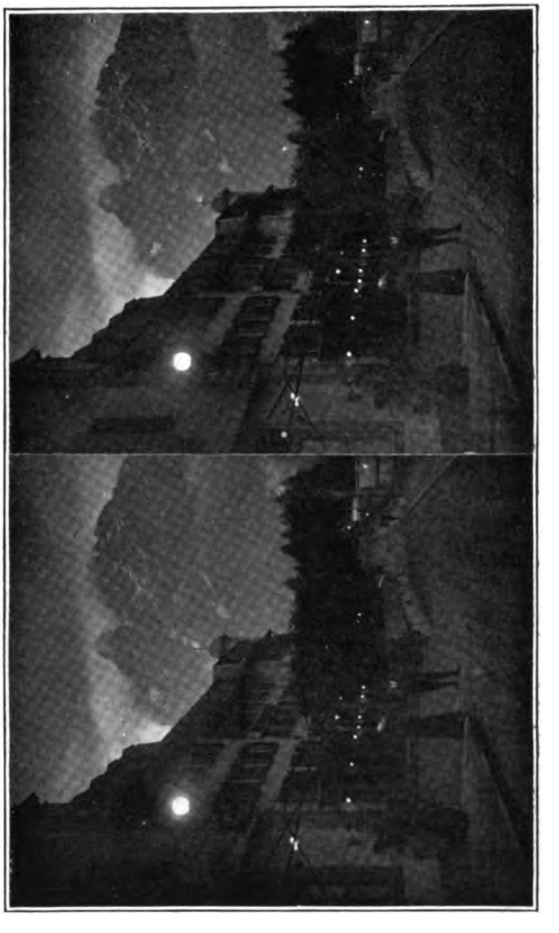


FIG. 2.—Grindelwald—Evening.

In a general way, dusk—that is to say, before all the light is gone from the sky but after the lighting of street lamps and shops—is the best time for taking such scenes. In this, as indeed in all photographic work, a certain amount of judgment and expedition is required to seize the right moment when the light in the sky and the artificial illumination are so balanced as to give a true and natural effect.

All the scenes illustrated were taken at the full aperture of $f/6$, and the plates were developed with adurol, or metol and hydroquinone, diluted to about one third of the normal strength; and the negatives have not been retouched in any way.

I will now proceed to give in a simple manner one or two of my experiences in the taking of such subjects (with an illustration of the result in each case), which I hope may be a guide to those who wish to exploit this interesting branch of photography.

Fig. 1 is a very ordinary street corner scene on a wet night, in a northern suburb of London, and the figures are unconscious assistants,—chosen because they were evidently waiting for a tram-car and therefore likely to remain moderately still. (I was somewhat disappointed in them.) There was still some light in the sky, although the lamps were already alight, and the exposure was about ten seconds—limited by the moving of the tram-car. Beyond these few details there is nothing to remark, as the exposure was a simple one in the same manner as if the scene had been taken by day. The figures in the middle distance were fortuitous, and it will often be found that at street corners—and particularly at the stopping places of

Digitized by Google

tram-cars or omnibuses—little groups will remain stationary for a moderate time.

Fig. 2 is a view in Grindelwald—of the Eiger Hôtel with the Wetterhorn in the distance. This, again, had a simple, *i.e.* single, exposure of about eight seconds. Thc electric arc-lamp was burning indifferently (which was perhaps an advantage), and there was still a considerable amount of light in the sky. In this case the figures were posed.

Fig. 3 differs somewhat from either of the foregoing scenes. It was taken, in the same neighborhood as No. 1, after dark, and there is no lamp directly in the view. The light in the sky is presumably the diffused light of the town. The figure is obviously posed. The exposure was about thirty-five seconds, and the high wind blowing at the time explains a certain amount of movement in the trees.

Fig. 4 is an example of *double* exposure taken in the same neighborhood. The lighting-up time of the electric lights having been ascertained, the camera was planted and the view arranged so as to include the as yet unlighted arc-lamp—about half an hour in advance. The little group of figures was induced to remain still for an exposure of about two seconds. The bicyclists then dispersed, and half an hour or so later another exposure of two seconds was made upon the lighted lamp, the general scene having in the meantime grown much darker. It will be observed that by this method the halation or ring around the light, noticeable in the first two examples, is avoided.

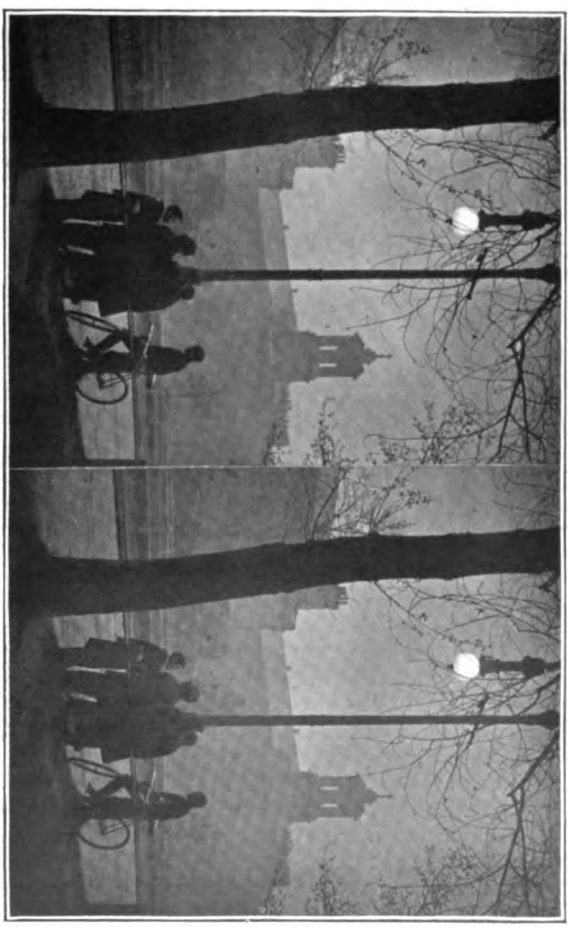
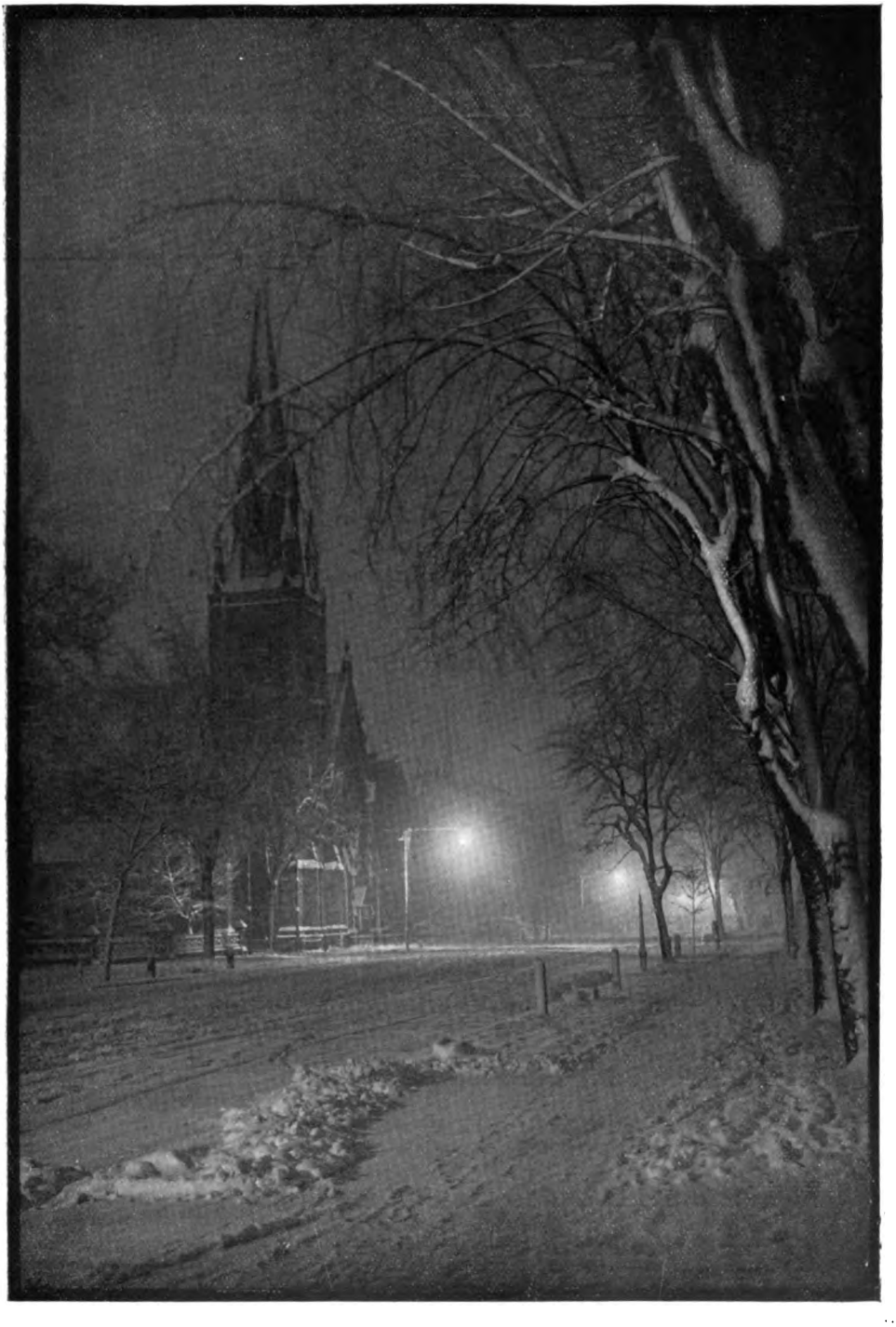


FIG. 4.—Made with two exposures.

Of course in all cases a stand camera must be used; the stand must be firmly planted; and great care must be exercised not to move the camera when replacing and re-drawing the slide and resetting the shutter "between the acts."

Very interesting photograms can be taken of lighted shops, and it will be found as a rule that the shopkeepers will enter into the spirit of the thing and pose as models on promise of a print; but this division of the subject comes more within the range of "interiors," and hardly within the scope of this article.

Digitized by Google



A WINTER'S NIGHT, PHILADELPHIA. *By Wm. C. Motteram.*

(Article, page 74.)

Digitized by Google

SOMETHING NEW ABOUT P.O.P.

The following note on a method of recovering over-toned P.O.P. prints was sent into the "Figures, Facts" Competition by A. H. W. Weston. The process is so simple and effective that doubtless many of our readers will at once put it to the test out of curiosity. Major-General Waterhouse, to whom we showed some of the results, writes us the letter which we print below.

OVER-TONED P.O.P. prints, especially flat prints, which are very apt to be overtoned, can be easily re-toned to a pleasing depth by the following method. It does not matter how long the prints have been toned, or if they are mounted, although unmounted prints are to be preferred. No dishes or chemicals are required, only an ordinary printing frame, a piece of thick glass, and a good fire. The latter is best when the flames have died out and only the glowing coals remain. Place the glass in the frame, and the print to be re-toned (which must be thoroughly dry) film down on the glass. Fix the springs, and hold it with some cord over or before the fire, keeping it moving in such a way as to ensure an even and intense heat. As soon as the glass is hot right through the toning will start, the gold being gradually decomposed by the heat. Examine the print from time to time through the glass, and at the desired tone remove the print and the toning will at once cease.

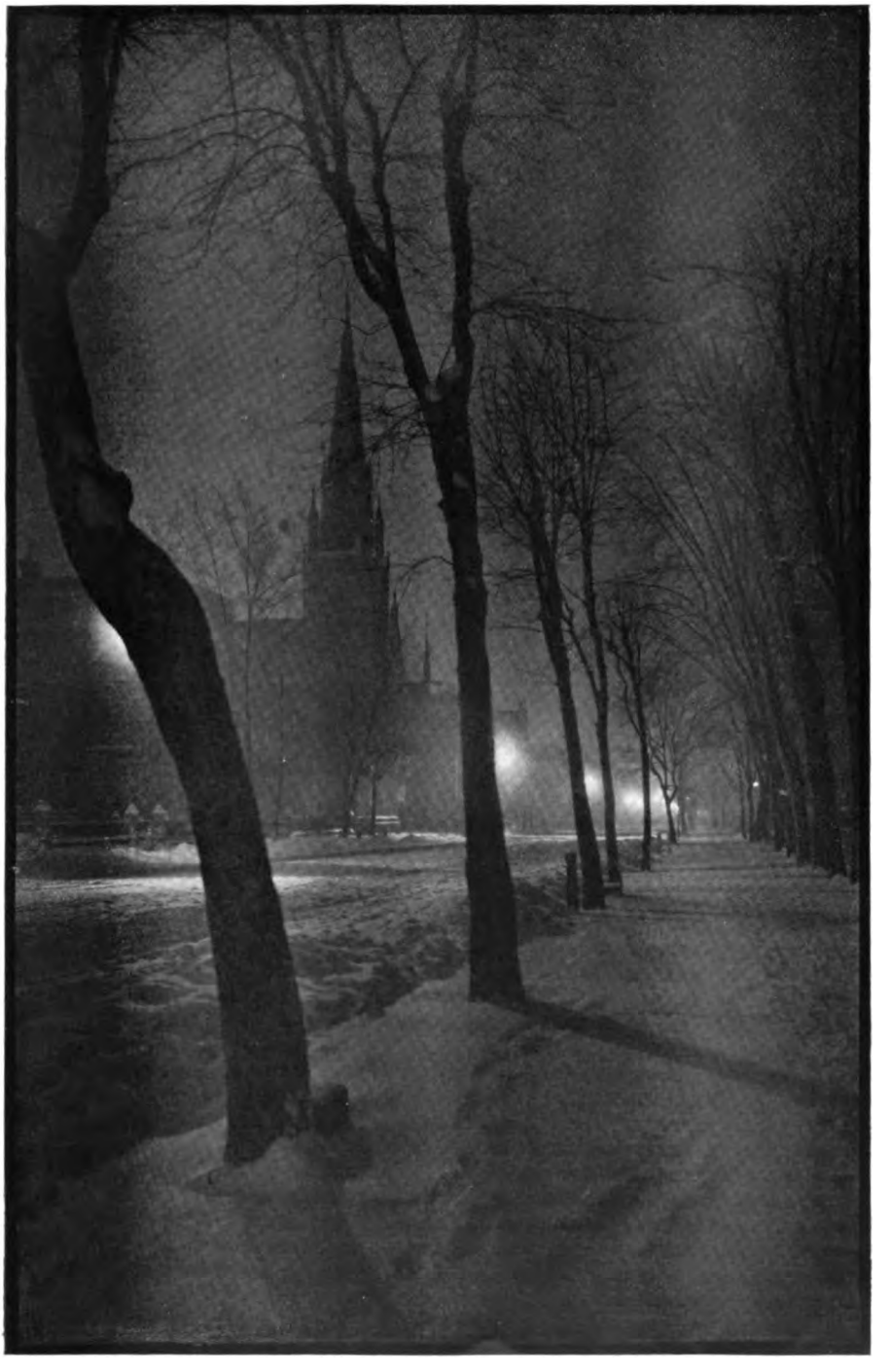
In this way prints can be re-toned in five minutes. Very blue and hard prints require longer. Unmounted prints are preferable, as they make better contact with the glass.

Major-General Waterhouse writes:—"Some experiments which I have made on this subject go to show that the change of color is produced by *moist* heat, and not by dry heat.

"Two P.O.P. prints (one matt and one glazed), both well toned with sulphocyanide and gold and of a good purple color, were torn in half and one piece of each was placed in a printing frame backed with strawboard and cloth, the frame being damp from being kept a long time in a room without a fire. The frame, with the prints in it, was placed in front of a good fire, and on examining it some minutes afterwards when it had become well warmed, the change of color to a redder tone remarked by your correspondent had taken place, but when opened the backing of the frame and the cards and print were moist and *steaming*, so that the change in the tone seems in some respects analogous to that of a wet print as compared with a dry one, but the change of color was permanent. On again putting another piece of each of the prints into the dried frame and replacing it before the fire there was no such change of color—from which it would appear that the change must have been due to the moisture. A well-toned print on albumenised paper exposed in a damp frame under similar conditions showed no change of color by heat, nor did another well-toned glazed P.O.P. print done in India. It may be mentioned that one of the first prints tried (the glazed one) had been treated with an alum and salt bath before toning.

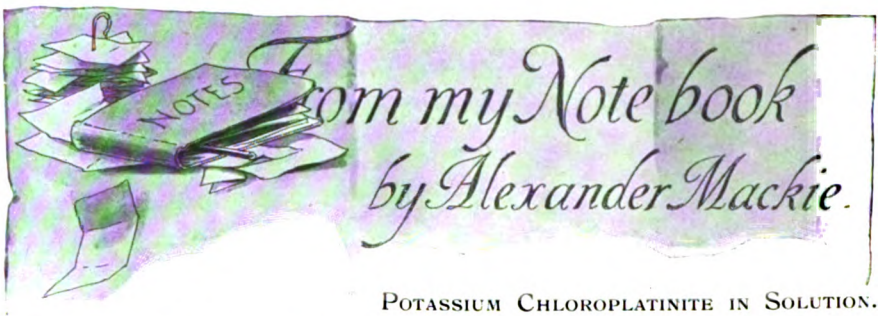
"Further experiment in actually steaming prints over boiling water in a closed vessel shows that the above explanation is correct. The albumenised paper print, and other prints which did not show the change in the frame, showed it distinctly and readily when exposed to the hot moist steam."

Digitized by Google



NORTH BROAD STREET, PHILADELPHIA. *By Wm. C. Motteram.*

Digitized by Google



Potassium Chloroplatinite in Solution.

On making a solution ot potassium chloroplatinite with ordinary tap water it is often found that, after a short time, an insoluble black precipitate is formed, which consists of a platinum compound, and constitutes so much waste. If in making the usual solution of 15 grains to the ounce about a drop of hydrochloric acid be added at the time of dissolving, this precipitate will be prevented, and, in most cases, after the precipitate is formed, if the same proportion of hydrochloric acid be added, re-solution will occur. For most purposes for which chloroplatinite is used the additional acid will not be of consequence, but it is advisable to use distilled water if possible in all cases for solutions of this salt.

Stoppers and Corks.

A glass stopper accurately ground to fit the bottle should be the best protection for the contents of the bottle possible, but, unfortunately, with the stoppered bottles of commerce one cannot rely upon the accuracy of the grinding, and a badly fitting stopper is a very delusive affair. When the contents of the bottle are highly volatile and of a nature that will not chemically affect a cork, a bottle ground for a stopper but fitted with a good sound cork is preferable. It is difficult to find a stoppered bottle to hold ether, for instance, that will prevent the ether vapor escaping so as to make its presence evident in the room in which the bottle is kept, but the same bottle well corked will not allow a sufficient trace to escape to betray its presence, and the cork will come out with a pop, showing that it will even retain the vapor under pressure. If a stopper will allow the escape of the volatilised contents of the bottle, it will also allow circulation of air from the outside to the inside of the bottle, and that is a matter equally important to avoid. With most chemicals it is permissible to smear the stopper with vaseline, which effectually completes the air-seal and has the added advantage that it prevents the stopper from becoming set. Animal or vegetable fat would be equally effectual, but vaseline has the merit of being a particularly stable substance unaffected by most chemicals. When solutions which it is necessary to protect from the air have to be stored in fairly large quantities, the ordinary screw-stoppered beer bottles are useful. They are not particularly ornamental on the laboratory shelves, but are reliable. While touching upon stoppered bottles it is not, perhaps, out of place to mention a method of loosening a refractory stopper which is often effectual when other remedies fail. It is to apply a few drops of paraffin oil to the junction and allow it a few days to run in. It is a very bad case that will not yield to this treatment.

Focussing Glasses.

In some kinds of photography, when extremely accurate focussing is a necessity, the use of a focussing glass of somewhat high power is perhaps

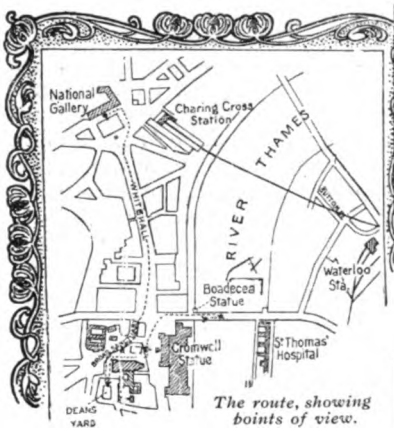
Digitized by Google

obligatory, but in ordinary practice it is advisable for those of good and normal sight, whenever possible, to dispense with any optical aid to focussing. No one finds any difficulty when the image on the screen is a brilliant one, but with a dimly-lighted subject the apparent difficulty of focussing is greater than the real one, because there is a tendency, unconsciously, to adopt a different standpoint. In ordinary practice, if we choose a particular object upon which to focus, we do not think about the actual definition at all, but by moving the focussing pinion backwards and forwards we arrive at the position of the best relative definition, and there we leave it without a thought as to the actual definition. When the illumination is very dim it of course requires much more careful observation to decide the best relative definition, and if we were content to accept the position found instinctively, it would rarely prove to be appreciably out; but the fear of a mistake leads us to examine the image for actual definition, and that leads to move the pinion again, and to go through the whole performance, often quite a number of times, eventually to leave the position where it would have been left after the first trial. When increasing years begin to deprive the eyes of their power of accommodation, the difficulties are complicated by the fact that a sharply focussed image will seem to be out of focus if the eyes are too near the screen for their own focus, and it is not instinctively realisable in observing an image on a screen whether the eyes are at the proper distance for distinct vision or not; and it is a good plan to make some distinct lines on the screen so that the position of the eyes may be adjusted before attempting to view the image. This applies whether spectacles are worn or not. My own practice is to wear for focussing a pair of spectacles which enable me to see at a distance of seven inches from the object. That is about the distance, I think, one would view the screen from with normal eyesight for critical definition, though a position much further back would be chosen to judge the general effect.

Focussing Cloths.

With a strange disregard of the purpose for which they are to be used, some photographic dealers supply their customers with focussing cloths which one would imagine were intended to serve some decorative purpose rather than the strictly useful one of protecting the ground glass from light while focussing. One of these æsthetic confections it was my unhappy lot to have to use during a day's outdoor photography. It was of black velvet lined with primrose-colored twill, and used in what presumably was the way intended, that is, with the velvet outwards, was practically useless, as the amount of light the colored lining reflected made it almost impossible to see the image on the glass. Reversed, it acted all right as a protection from light, but clinging velvet is not the most comfortable material to bury one's head in, and the bright yellow headdress made one a more conspicuous object than was desirable under the circumstances. There is ample room for difference of opinion as to what an ideal focussing cloth should be. Some photographers expend a good deal of ingenuity in designing patterns to fit to the camera or arrangements of strings or straps to prevent the cloth blowing about in windy weather, and often these arrangements are quite practical; but my own preference is for a plain cloth of ample dimensions, made of two thicknesses of either twilled calico or thin Italian cloth. At one edge I keep four or five safety-pins, which are not used under ordinary circumstances, neither are they in the way; their employment comes in windy weather. Whatever the material a focussing cloth is made of, it should be black on both sides, or at any rate very dark—this would seem to be obvious—and it should have a face of a kind which has as little tendency as possible to cling to one's cap and hair.

Digitized by Google



The route, showing points of view.

SIX-PLATE PROMENADES

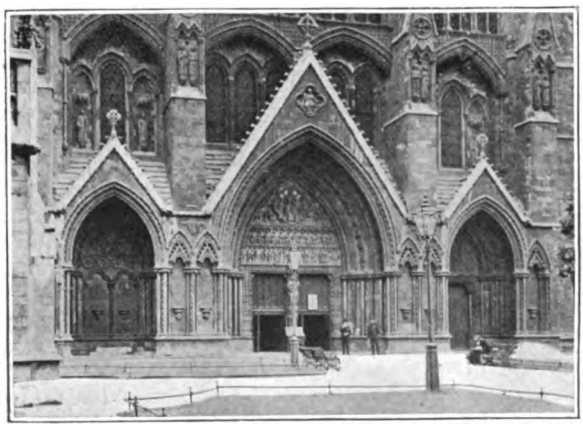
A series of brief walks, each for six exposures, planned to secure the most favorable lighting.

III.—CHARING CROSS AND WESTMINSTER.

By H. SPRINGALL.

IF you have luck, the sun may shine. It is well, therefore, to arrange your walk so that if by accident the sun does peep out for an instant it will help to give your photogram some life and relief. For this reason start the third tour from Waterloo at about 2.30 as before, and go to Trafalgar Square by way of the Strand. The point from which the first exposure was made was suggested by a reproduction in *The British Journal Almanac* by Harold Hood, and is the steps of the National Gallery. From this position one is somewhat restricted, owing to the trees, and the Nelson Column is not well lit as one looks south. $\frac{1}{25}$ sec. at *f*/8 was given in this case, and a color-screen was used to preserve Big Ben in the distance.

Exposure No. 1.

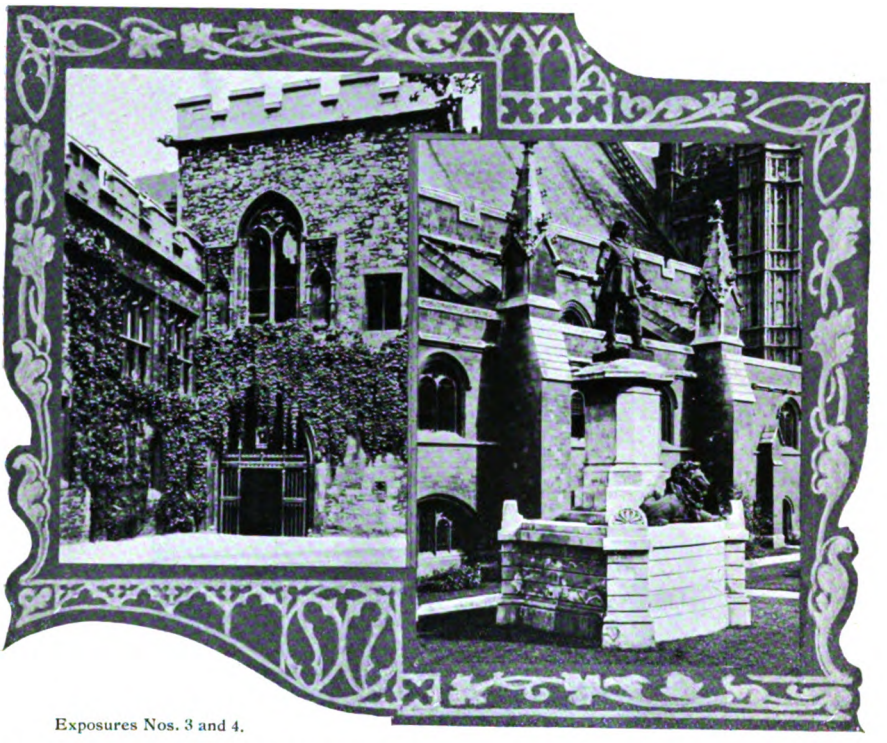


Exposure No. 2.

Exposure II.—The north front doorway of the Abbey had 1 sec. at *f*/16. The railings were used for a stand. The door facing north gets no sun except in early morning in midsummer.

After some interiors had been taken in the Abbey, the gateway in the north-east corner of Dean's Yard presented

Digitized by Google



Exposures Nos. 3 and 4.

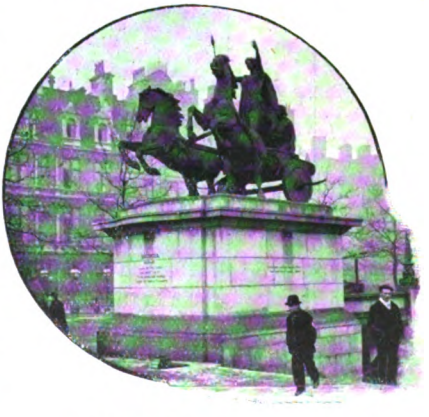
an attractive picture for the third exposure. Having a stand, I gave $\frac{1}{4}$ sec. at $f/22$; without a stand, $\frac{1}{25}$ sec. at $f/11$ would have sufficed. Some mathematician may argue that these exposures are not equivalent; I say they are. To the ordinary reader I say the vagaries of my shutter put them right. To the mathematician I say—

$$\left(\frac{11}{22}\right)^2 \times \frac{1}{4} \times (\text{my shutter eccentricity}) = \frac{1}{25}.$$

The fourth exposure is the statue to Cromwell: $\frac{1}{25}$ sec. at $f/16$, as usual, was the exposure, but no restrainer was used in developing. The negative is a little over-developed. This accounts for a hardness which may be wrongly attributed to under-exposure. It is now four o'clock, and the light is from an excellent quarter for photographing St. Thomas' Hospital from Westminster Bridge (fifth plate). The exposure was the same as in the previous case, using, however, a restrained developer.

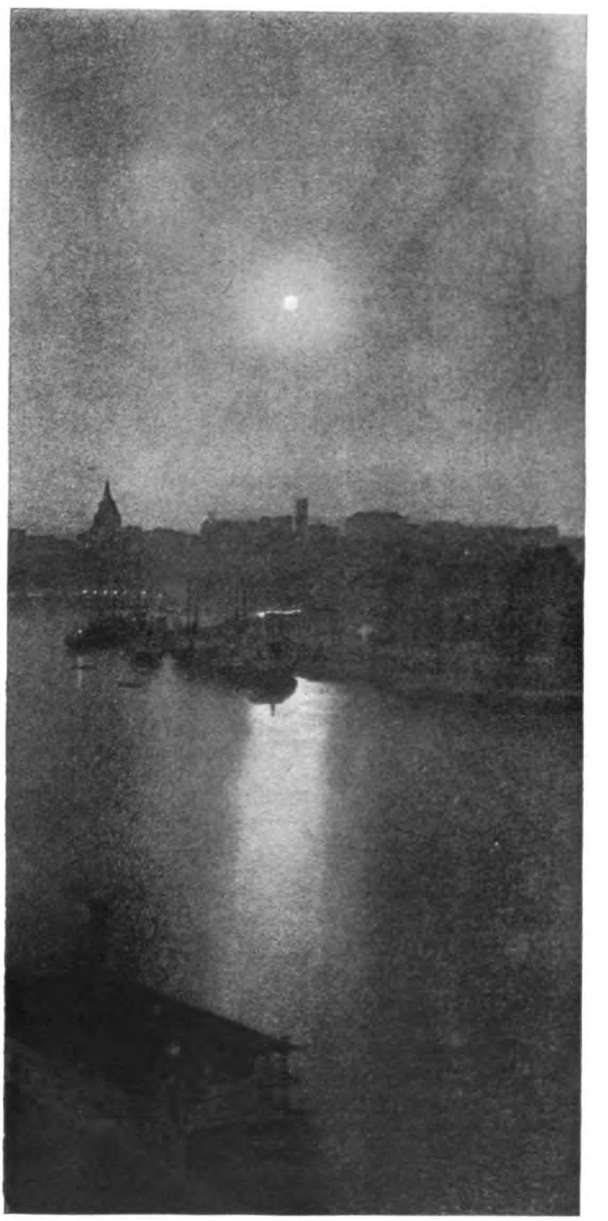
The Boadicea Statue, on Westminster Bridge, is given as the sixth exposure, although it was not taken on the actual excursion. As it faces south, the light is favorable for it any time in the afternoon.

I may add a few words as to permission to photograph in the Abbey. Applications



The Boadicea Statue.—Exposure No. 6.

Digitized by Google



MOONLIGHT AT STOCKHOLM. *By H. Jacob.*

Digitized by Google

The fifth exposure.—St. Thomas's Hospital.

should be made to the Dean on a form obtainable from the Chapter Clerk, The Sanctuary, Westminster. The form should be sent with a stamped and addressed envelope. Applications are very numerous, so that one occasionally has to wait for some time for one's turn. There are no fees.

FIGURES, FACTS, AND FORMULÆ.

Result of the Competition.

AWARDS.

1st prize (£1 1s.): "Albumen" (W. Foster Brigham, Scarborough). 2nd prize (10s. 6d.): "Rain 250" (Gino Belotti, Milan, Italy). Honorable mention: "Firefly" (A. W. H. Weston, Brighton); "Progression" (Dr. George Findlay, Brailes, Banbury); "Satzuma" (Edmund F. W. Paine, Manchester); "Strebor" (J. T. Roberts, Birmingham).

The lengthy notes by W. Foster Brigham, to whom the first prize is awarded, have been somewhat rearranged so as to agree with the sections in "Figures, Facts."

THE STUDIO.

BEST PUTTY FOR GLAZING.—Whiting, 2 parts; white lead, 1 part (or finely ground litharge, 1 part). Dried and mixed with boiled linseed oil (MOSAICS).

BACKGROUNDS (PAPER).—Stretched and shaded with lampblack and whiting applied as with stumps, using rags.

PASTE FOR SOAKING PAPER TO MAKE ARTIFICIAL ROCKS, ETC.—1 lb. flour; 3 quarts water; alum, 1 teaspoonful. Well boil and mix. Work on a rough framework.

TO OBSCURE GLASS IN STUDIO.—In place of tissue paper, stipple with starch or flour paste mixed with a little whiting.

DISTEMPER FOR ACCESSORIES.—6 lb. whiting; 1 lb. patent size (glue powder). Soak whiting in enough water to cover it, for six hours. Dissolve size in quart of hot water, and mix.

WORK ROOM.

TO WATERPROOF PAPER.—Coat paper with a strong solution Castile soap. When almost dry go over with strong solution of chrome alum.

POLISHING BRASS.—Rub with rottenstone and sweet oil. Rub off with flannel, and polish with chamois.

TARNISHED BRASS.—Rub over dilute solution of oxalic acid. When bright, wash off well, and polish with whiting and soft leather.

TRACING PAPER, TO MAKE.—Brush tissue paper with:—1 part oil of turpentine; 1 part mastic varnish or Canada balsam thinned with turpentine. Afterwards hang up to dry.

QUICK FILTER.—Chamois leather passes syrups and mucilages very rapidly. Wash in solution of soda before use to remove grease.

TEST FOR GOLD OR SILVER.—Clean metal and touch with solution of nitrate of silver. If it remains uncolored it is either gold or silver; if it darkens, baser metals.

TO CLEAN BOTTLES.—Quarter fill with small shot, and add washing soda solution. Shake well. Shot greatly assists other solutions, page 10 of *Figures, Facts*.

FOCUSSING SCREEN (extremely fine grain).—Coat glass with varnish as follows:—Gum sandarac, ¼ oz., white lac, 1½ oz., dissolved in wood alcohol 20 oz. Filter, and add as much tartaric acid as will dissolve (say 120 gr.). Shake at intervals for a week. Decant clear liquid and use like hot varnish.

WOOD POLISH.—Bleached lac, 1 part; methylated spirit, 6 parts. Apply thin. Rub well.

TO GILD FRAME WITHOUT GOLD LEAF.—Wash with soap and hot water. Dry. Coat with chrome yellow in oil and terebene (pennyworth of each), mixed to consistency of

Digitized by Google

cream. When dry give a coat with gold size, and when tacky dust over with bronze powder. Let dry, and dust off superfluous powder. Coat with spirit varnish.

To Clean Daguerreotypes.—Rinse under tap, flow 10 per cent. cyanide of potass solution on and off until tarnish disappears. Then well wash. Great care is necessary.

Dead Black Varnish for Brass.—Lampblack, 2 gr.; gold size, 3 drops. Well mix, and add 24 drops of turpentine.

Ink Unaffected by Acids.—Mixture of 1 part Trinidad asphaltum; 4 parts oil of turpentine. Color with plumbago.

Black Polish for Frames.—White shellac, 4 parts; methylated spirit, 20 parts; gas black, 1 part.

Reviver for Frames.—1 part vinegar; 1 part methylated spirit; 1 part linseed oil.

Dead White for Metal and Wood.—Alcohol, 8 oz.; zinc oxide, 4–6 oz.; shellac, 2 oz.

To Clean Paint Brushes (Oils).—When brush is stiff and hard, place in a saucer containing turpentine. Set on fire. Let it burn for a minute until hot. Then smother flame, and work brush with the fingers, dipping frequently into hot spirits. After using brushes, always clean off in turps. If putting away for some time wash well with hot water and soap.

To Clean Slimy Sponges.—Rinse in:—Fused chloride of calcium, 1 oz.; water, 8 oz., until sliminess disappears, and well wash.

FLASHLIGHT.

Magnesium, 40 parts; potass perchlorate, 63 parts; sodium chloride, 5 parts; barium tartrate, 7 parts. Aluminium makes good flash. Use "silver bronze." Can take place of magnesium in above mixture.

REDUCING DENSITY.

Reducer (Mechanical).—Salad oil, 2 oz.; terebene, 2 oz.; globe polish, 2d. tin. Mix well, and filter through flannel. This is also good for brightening bromides.

ALBUMENISED PAPER.

Toning Solution.—No bath to beat it. Gold chloride, 7½ gr.; carbonate of soda, ¼ oz.; acetate of soda, ¼ oz.; water, 40 oz. Make up twenty-four hours before use.

Tungstate Bath.—Sodium tungstate, 45 gr.; hot water, 15 oz.; gold chloride, 2 gr.

Chalk Bath.—Water, 2 oz.; acetate of soda, 20 gr.; common salt, 20 gr.; chloride of gold, 2 gr. Before adding gold solution, place it in graduate with some prepared chalk. Stir well and filter into bath. This bath will keep.

COLLODION P.O.P.

Borax Bath (beats all).—Borax, 80 gr.; gold chloride, 2 gr.; water, 25 oz.

For Purple Tones.—Print very dark. 1 per cent. solution gold chloride, 1 oz.; hydrochloric acid, 3 oz.; water, 10 oz. Less acid blue tone. Wash well before fixing.

Sepia Tones.—Wash in six changes of water (lukewarm); to last three add 1 per cent. ammonia (·880). When prints are lemon yellow, tone in platinum bath.

Red Chalk.—Wash in three changes. Place in:—Salt, 2 oz.; water, 40 oz. Rinse, and tone in borax bath.

Brown and Dark Blue.—As for red, but tone in platinum. Very long time gives blue.

BROMIDE PRINTING.

To Prevent Blisters rub over back of print before developing with cotton-wool damped with wood alcohol.

Toning Bromide.—Bleach in bichloride of mercury and hydrochloric acid bath; or in:—Nitrate of lead, ½ oz.; ferricyanide of potass, ½ oz.; distilled water, 12 oz.

For Brown, immerse in strong ammonia bath or fume with ammonia. Wash well.

Other Browns, by placing in hypo of various strengths; or, potass bichromate, 1 part; ammonia, 1 part; water, 10 parts; or, potass sulphocyanide, 1 part; water, 10 parts; or, sodium sulphite, 1 part; water, 10 parts.

For Red, immerse bleached print in copper sulphate, 1 part; water, 10 parts: or, for *red brown*, in sodium sulphite, 1 part; water, 10 parts.

For Green to Grey, immerse lead-bleached print in chloride of cobalt, 1 part; water, 5 parts.

For Blue, immerse black print in bath mixed in following order:—Saturated solution ammonia-citrate of iron, 1 drm.; saturated solution potass ferricyanide, 1 drm.; hydrochloric acid, 2 drm.; water, 5 oz. When tone is reached wash well to clear the whites.

"GASLIGHT" PAPERS.

Warm Tones on Gaslight Bromide (Blue Black).—After developed and fixed print has been washed, bleach in:—Potass bichromate, 15 gr.; water, 3½ oz.; hydrochloric

Digitized by Google

acid, 30 to 45 minims. When bleached, wash until water shows no yellow tinge, and re-develop.

CARBON PRINTING.

WAX FOR SUPPORTS.—Yellow resin, 6 drm.; pure beeswax, 2 drm.; turpentine, 1 pint.

CARBONS FROM WEAK NEGATIVES.—Sensitise on weak bath and squeegee on to celluloid.

CLEANING CARBONS FROM OPAL.—Pickle for twenty-four hours in ammonia (1 in 20), and scrub off with hard brush.

TONING TRANSPARENCIES.—Place unalumed plate in tepid extract of logwood for bluish blacks.

PLATINUM PRINTING.

BLUE TONE.—Place finished print in:—Water, 4 oz.; perchloride of iron, 40 gr. Leave five minutes, and immediately remove without washing to 10 per cent. solutions of uranium nitrate, potass ferricyanide, sulphite sodium, 1 drm. of each. Add 3 drm. glacial acetic acid and water *to* 6 oz.

TO REDUCE SEPIA PRINTS.—Dissolve chloride of lime in cold water (10 per cent. solution); leave for some days, and filter before use. Attacks high-lights most.

MOUNTANTS AND STAINS.

GUM-DEXTRINE.—Picked white gum, ½ oz.; dextrine, 2¼ oz.; ammonia, 4 drops; water, 8 oz. Pound gum in mortar, add dextrine, rub smooth with water, 2 oz. Add rest of water and boil for ten minutes, stirring the while. Same as commercial mountants; stronger than starch; will keep.

TO TEST FOR HYPO IN CARD.—Cut three or four pieces of card and place in beaker with small pieces of granulated zinc. Half fill with water and add ½ drm. sulphuric acid. Cover beaker with round piece of filter paper, turning it under edges of beaker. Place a drop of solution of sugar of lead on the paper. In half an hour, should the sugar of lead have left a brown stain, hypo is present. This test shows infinitesimal portions of hypo.

STAINS.—*Black.*—Nigrosin in water to an inky black; water, 40 parts; borax, 1 part; shellac, 2 parts. Boil and strain. Add glycerine, 1 part; aniline black, 4 parts.

Mahogany Red.—Water, 80 parts; washing soda, 3 parts; dragon's blood, 4 parts. Dampen wood with nitrous acid, 1 part; water, 10 parts; and apply stain.

Green.—Aniline malachite green in methylated spirit; *for bronze green*, when dry, follow with 5 per cent. potass bichromate.

Yellow.—Aniline yellow in alcohol to taste.

MISCELLANEOUS.

TO REMOVE INK-STAINS FROM PHOTOS.—Wet surface of print and apply oxalic acid, 1 drm., water, 1 oz. (warm), to the spot, rubbing until it disappears. Wash thoroughly and dry.

LANTERN SLIDES.—A slide may be made in a few moments for diagrams by coating glass with benzole varnish to which a drop or two of indiarubber solution is added. This is perfectly transparent, but the finest writing may be done with steel pen and india ink.

SAFE-LIGHT.—Plates coated with gelatine: soak one in 2 per cent. methyl violet, other in ½ per cent. tartrazin; rinse in water, and bind together. Cuts off all but slight band in red.

RETOUCHING MEDIUM.—Place half an ounce of turpentine in a four or five ounce bottle. Leave cork out for a fortnight, and you will have a grand medium. If too thick, thin with turps.

MAGIC PHOTOGRAMS.—Print as usual with P.O.P.; fix without toning. Wash and place in saturated solution of bichloride of mercury. Wash and keep in dark. To develop, apply hyposulphite of soda with a sponge.

From the formulæ sent by Gino Belotti, to whom the second prize is awarded, we have space only for the following:—

REMOVING FILMS QUICKLY FROM GLASS.—A. Sodium fluoride, 6 gr.; water, 4 oz. B. Sulphuric acid, 6 drops; water, 1 oz. Both solutions can be used until exhausted. Place the negative in A for a couple of minutes, then place directly in B; after another couple of minutes touch the film with finger from one corner. It will soon leave the glass.

Very good also in the case of a broken negative, for transferring the film on to another glass. In this case, place—before stripping—in 5 per cent. chrome alum solution for half an hour. Wash well, and proceed to strip.

Digitized by Google

PRESERVING FLOWERS.—Cut the stem of flowers, and, holding them down, burn the end of stem. The best method is to hold it over a flame, from a piece of wood (say a chip as used for lighting fires); on no account must an oil or spirit lamp be used. Flowers treated this way will keep fresh for several days. The method is used by Japanese painters.—STREBOR (J. T. Roberts).

AN INTENSIFIER which makes the negative of a reddish color, very inactive and yet does not clog the high-lights like a uranium mixture, is:—A. Copper sulphate, 30 gr.; potass citrate (neutral), 240 gr.; water, 9 oz. B. Potass ferricyanide, 25 gr.; water, 1 oz. Dissolve, and add B to A gradually, stirring all the time; the solution will then be clear. This solution keeps and may be used over and over again. A formula something like the above but half the strength is given under bromide toning, but is not given for negative intensification, and is really a capital intensifier.—PROGRESSION (Dr. George Findlay).

[Dr. Findlay's experience is not that of other workers, who have found copper and ferricyanide to have no intensifying action whatever.—EDS.]

The closing day for the "Photography for Profit" competition is March 1st. Competition of the month, "The best brief description of a holiday resort for the pictorial worker, with three photograms as specimens of what can be done." Last day, April 1st.

Scoring for the series prize of £5 5s.: W. Foster Brigham, 5; Chas. H. Evans, 4; A. Edwards, 2; Gino Belotti, 2; W. H. Barraclough, 2.

Let us draw attention also to a new competition, full particulars of which appear in the advertisement pages. Strictly speaking, it is something more than a competition—a standing offer for photograms of fires either in progress or as soon after the event as possible. By "fire" we mean a conflagration of some size involving considerable destruction of property. There is a prize of £5 5s. for the best photogram sent in during the next twelve months, but meanwhile a remunerative offer for any prints whatsoever, so long as they are submitted within fifteen days of the fire.

CHILDREN WITH PUPPIES. By Chas. Reid.

Digitized by Google

What's What

Unal, according to Professor Namias, is well suited to over-exposures if restrained with a little saturated solution of boric acid in place of, or in addition to, potassium bromide. Negatives of good vigor can be obtained in this way, whilst the remarkable stainless and keeping properties of unal induce Professor Namias to express a very high opinion of it.

Tri-color Gum Prints.—Dr. Miethe is interesting himself in tri-color gum-bichromate, and is using ferro-prussiate for the blue image, a modification of the process which was introduced by W. E. Brewerton in 1898, and is described by him in *Ferric and Heliographic Processes*. Mr. Brewerton used for his yellow and red prints the transparent colors of A. B. Fleming & Co. Dr. Miethe names those of Neisch & Co. of Dresden as very suitable—the dark lemon chrome yellow for the blue-sensation print and deep "krapplack" (carmine) for the green-sensation negative.

Backing with Asphaltum.—The addition of essence of turpentine to the solution of asphaltum in benzene is recommended by H. Prinner in *The Photo-Gazette* for getting over any tendency of the backing to chip off. The formula is—

Benzene (pure crystallisable)	2 oz.
Asphaltum (pure bitumen of Judæa)	300 gr.
Essence of turpentine	2½ drm.

The objection sometimes urged against asphaltum backing, that it is not easily removed before development, is apparently made without having used for that purpose a rag or bit of "waste" moistened with turpentine, by which the asphaltum is quickly and cleanly removed.

Copying Medals, etc., without a Camera.—Dr. Sephane Leduc, in *La Photographie*, explains how to make good copies of coins, plaques or other objects in relief, by preparing first a transparent or semi-transparent cast which serves as a photographic negative for subsequent prints by contact or enlargement. Gelatine with more or less Indian ink is preferred as the material for the cast. The slighter the relief of the object, the more Indian ink. The coin or medal is laid on a glass plate and a 20 per cent. solution of the gelatine mixture flowed over it, the temperature of the mixture being such to make it of syrupy consistence. Pour on just sufficient to cover the coin and apply a piece of thin glass, which evens the gelatine coating. Any air-bubbles on the surface of metal are expelled by moving the glass. The whole is then left to cool and set, and the medal then lifted away from the gelatine by aid of a pair of forceps, leaving on the glass a negative for enlargement or contact printing.

Notes on Chemicals.—*Sodium sulphite*, also called soda sulphite, is Natrium-sulphit or Schwefeligsaures Natron in German, Sulphite de soude in French. Formula, $Na_2SO_3 7H_2O$. As purchased it should be in clean trasparent crystals, not white and powdery in appearance. Sulphite of bad manufacture or kept for a long time shows this powdery crust of sulphate, which is a very undesirable impurity in sulphite to be used in developers. Some samples can be deprived of the sulphate by rinsing the crystals for a few seconds in a very little cold water. Place them in a measure or jug, sprinkle about enough water over them to wet the whole, and swirl them round for a few seconds. The surface coating of sulphate will probably go, leaving the crystals clear and bright. Then dry between blotting paper or on a towel and weigh out. When hot water is poured over even the purest soda sulphite it becomes opaque and powdery in appearance ere it disappears into solution, but from a quite harmless cause—the removal of the water of crystallisation. There is no objection to using hot water because this takes place.

Sodium sulphite is a reducing agent in the chemical sense, *i.e.* it absorbs oxygen, becoming converted into sodium sulphate. It is this property which enables it to play the important part of "preservative" or "anti-stain" in photographic developers. The oxygen of the air, whether as air or dissolved in water, combines with the sulphite, and the pyro or other developer escapes oxidation. The correct proportion of sulphite for a pyro-soda developer is 20 to 30 gr. per oz. of developer as poured on the plate; and if the developer is used diluted, extra sulphite should be added from a 50 per cent. solution to keep up the proportion.

The reducing constituent of sulphite is the sulphurous acid gas, SO_2. The value of a sulphite is determined by the proportion of SO_2 it contains. Pure soda sulphite contains 25·4 per cent., potass metabisulphite 57·6 per cent. This SO_2 itself is a pungent choking gas produced when sulphur is burnt. Its solution in water is sold as sulphurous acid, and contains 9·5 parts of SO_2 per 100 parts of liquid.

Soda sulphite dissolves in about twice its weight of water at 90° F., the temperature at which it is most soluble. Although chemically a "neutral" salt, the solution of pure sulphite is alkaline to litmus paper. This does not indicate that sulphite contains sodium carbonate. Carbonate is nevertheless a frequent impurity, but to test for it add a drop or two of phenolphthalein solution to a little of the sulphite dissolved in water.

Digitized by Google

A deep red color denotes alkalinity, *i.e.* carbonate. When making up developers sulphite should not be introduced in an alkaline state, and hence citric acid should be added until the sulphite solution is just acid. Litmus paper will answer for this test.

Sulphite, either solid or in solution, must be kept away from the air or it spoils by oxidation. The stock solution is best stored in a number of, say, 6-oz. bottles quite full. The solid also should be well bottled, but does not alter so readily as the solution.

Sodium sulphite is put on the market in the anhydrous state, *i.e.* without water of crystallisation. Its formula is thus Na_2SO_3. Theoretically it contains exactly twice the proportion of SO_2, but recent analyses by Prof. Namias give the percentage of SO_2 as only 28 per cent. instead of the theoretical 50·8 per cent.

Sodium acid sulphite or bisulphite is sold chiefly in solution, but is of very variable strength, and generally contains only a part of its theoretical proportion of SO_2.

GEORGE E. BROWN.

Two Illustrations in this issue are part of the many which we were reluctantly obliged to omit from *Photograms of 1903*. That by H. Jacob on page 86 suggests still another of the opportunities open to the photographer after dark or just at the close of day. This is a theme which we have been at some pains to emphasise in this issue, as this month and the next provide occasions for photography of such a kind without exposing the worker to the discomforts of the colder part of the winter.

The study by Chas. Reid, perfect of its kind, needs not a single word of explanation.

The Guild established in Leeds is one of the smallest and one of the most successful of the world's photographic societies, because its object is definite. It is forming a collection of pictures made by photography, with intent to offer the same to the Municipal Art Gallery for permanent display. The "consideration" given to the producers of the selected pictures, is a picture or pictures chosen from the works of the members of the Guild; and an invitation to contribute to the Guild's permanent collection is one of the greatest compliments that can be paid to the pictorial photographer.

The Northern Photographic Exhibition (Liverpool, 25th March to 9th April 1904; Leeds, 1905; Manchester, 1906) is fully assured of a great success for its first show, in a magnificent suite of six rooms in the Walker Art Gallery, Liverpool. The largest room is reserved for lectures, of which ten will be given, and the other galleries are set apart for pictorial work, scientific and technical, trade, lantern, and refreshments. All the trade space is let, the pictorial and lantern sections are strongly supported, and the opening function will be attended by a crowd of Liverpool's most influential folk. The technical section is still open for more support, and the large handsome plaques in bronze, silver, and silver gilt should tempt many competitors, and very richly reward those who are successful. Only a few days remain for entries. The secretary is C. F. Inston, 25 South John Street, Liverpool.

The Northern Exhibition, to be held alternately in Liverpool, Leeds, and Manchester, has been the subject of some mis-statement as to the conception of its idea. It is based upon the experience of the three Southern exhibitions (Southampton, Southsea and Hove), whose effective co-operative scheme was designed and engineered by F. J. Mortimer of Southsea. S. G. Kimber suggested the idea of the Northern exhibition to C. B. Howdill of Leeds, who laid it before the Liverpool and Manchester societies, with the result that conferences were held, at which the details gradually took shape. The three societies pledge themselves to special support of the exhibition wherever held, but the individual society arranging the exhibition in any given year is entirely responsible for management and finance.

For the second exhibition (1905) the Leeds Camera Club has secured the splendid and excellently lighted building of the Municipal Art Galleries; and it has taken the novel step of arranging for a summer date which will not clash with another photographic exhibition anywhere in the world.

Congratulations to C. E. Kenneth Mees and S. E. Sheppard, as well as to all desirous of seeing photography among the exact sciences. The University of London has granted the research degree of Bachelor of Science to these two gentlemen for original photo-chemical investigations. Mr. Mees' thesis was "The Sensitometry of Photographic Dry Plates"; Mr. Sheppard's, "The Physical Chemistry of the Photographic Development of a Plate." This is the first occasion on which an English examining body has granted a degree for photographic research.

What does "Hurter & Driffield" mean?—No. 56 of *The Photo-Miniature* (Dawbarn & Ward; 6d.) deals with the Hurter & Driffield system, and contains a *résumé* of the more popular side of the widely scattered papers by Messrs. Hurter & Driffield, which will be extremely welcome to those who desire to understand more of the underlying principles of their art than are usually given in the elementary text-books of photography. The fact that the little monograph is written by Mr. V. C. Driffield is sufficient guarantee of the accuracy and interest of the contents. While we scarcely share Mr. Driffield's hope that it will induce readers to adopt in its entirety the system of accurate work which has been synthesised by Dr. Hurter and himself, it may and should prevent the ridiculous mistakes in elementary photographic theory which are but too frequently

Digitized by Google

displayed even by those who aspire to be considered the leaders of photography. We cordially recommend this little book to all our readers.

Telephoto Work.—The series of articles by the late Dr. Deller which appeared in our pages last year have been added to and published in book form by Dawbarn & Ward, Ltd., 6 Farringdon Avenue, E.C. The volume is uniform in style and price with *Hand-Camera Photography*, by Walter Kilbey, or the ubiquitous *Figures, Facts*, viz., at 2s. nett. and 1s. nett. Its title, *Telephoto Work*, sufficiently describes the compass of the little volume. It does not aim to expound the principles of telephotography or even to prepare the reader for feats of high-power work with the telephoto lens. Its mission lies nearer to the actual requirements of the photographer. It aims to introduce the telephoto lens as a tool for daily use, as a battery of lenses within the bulk of a single instrument. The author is fortunate in the illustrations with which he gives point to his directions. Moreover, his style is bright, lucid, and refreshingly direct, insomuch that the guide should be received with favor by those desirous of knowing how to buy and use the telephoto lens.

The First Scottish Salon, arranged by the Scottish Federation of Photographic Societies, and held in the Sandeman Galleries, Perth, from February 13th to February 27th, is an exhibition of which its promoters may be very proud. Henry Coates, president, J. B. Maclachlan, secretary, and J. W. Eadie, who decorated the walls and hung the pictures, were well supported by Alex. Mackenzie, secretary of the exhibition, and by Messrs. Campbell, Craigie, Rodger, and others. Two hundred and twenty-four pictures were hung, the work of eighty-eight exhibitors, of whom all were Scotsmen or residents in Scotland with the exception of Percy Lewis of Bristol, to whom a special invitation and a separate panel had been given. At least ten or a dozen of the unknown exhibitors were well worth their place in the Royal or the Salon, and the average quality of the work was very high. The lantern slide section was particularly strong, so that the societies and members who took the prizes secured them very worthily. They were—1, Glasgow Eastern; 2, Dundee and East of Scotland; 3, Paisley Philosophical Institute (Photographic section); 4, Blairgowrie Photographic Association; and for the individuals—1, W. F. Crockett (Glasgow Eastern); 2, Archibald Campbell, Dundee; 3, J. B. Maclachlan, Blairgowrie. The Federation has now twenty-four societies, with some seventeen hundred members, scattered from Paisley to the Outer Hebrides, although it is but one year old. Its second exhibition will be in Glasgow in February next.

Books, etc., Received.—*Annual Report of the Manchester Amateur Photographic Society*, 1903.—*La Photographie Vitrifiée.* By René d'Héliécourt (Paris: Chas. Mendel; 3 fr.). A practical manual on ceramics.

FORTHCOMING EXHIBITIONS AND COMPETITIONS.

Particulars of Exhibitions are given when first announced, and again when it is time for entries to close. Will secretaries who wish insertion please mention details below, and note that last day is 12th of each month for publication on 25th? The Editors will feel grateful for the Exhibition catalogue as soon as published.

En.=Entries. Pic.=Pictures. Ex.=Exhibition. G.=Gold Medals. S.=Silver Medals. B.=Bronze Medals. O.C.=Open Classes. Sec.=Secretary.

NOTICE TO EXHIBITORS.

On the suggestion of several readers, the Editors have arranged to send entry forms for the exhibitions or competitions announced month by month on receipt of TWO PENNY STAMPS. *Their omission to enclose any form or forms should be taken as an indication that at the time of despatch the printed matter was not published. It is hoped that exhibiting readers may find it convenient to obtain the entry forms of all current shows by a single application in this way.*

(1) *Northern Photographic Exhibition.*—Liverpool. To be held in the Walker Art Gallery, March 25 to April 9. Four classes:—Pictorial, scientific and technical, lantern slides (pictorial), trade. Medals and plaques. En., March 11. Pic., March 13. Frames to go to the Walker Art Gallery; lantern slides to the Liverpool Amateur Photographic Association, Eberle Street, in each case addressed to the Sec., Chas. F. Inston, F.R.P.S.

(2) *Northern Exhibition.*—Leeds, 1905. June and July in the City Art Gallery, Leeds. Sec., F. G. Issott, 62 Compton Road, Harehills, Leeds.

(3) *Brentford P.S.*—En., March 3. Pic., March 10. Ex., March 15 to 17. 2 O.C. Plaques. Sec., Frank H. Read, Ferndale, Clifden Road, Brentford.

(4) *Croydon C.C.*—En., March 26. Pic., March 31. Ex., April 6 to 13. Sec., C. O. King, Hurst Bank, Selsdon Road, Sanderstead.

(5) *West Hartlepool A.P.S.*—Ex., April 13 and 14. Sec., E. F. Jones, 55 Landsdowne Road, West Hartlepool.

(6) *Glasgow Southern P.A.*—En., March 1. Pic., March 14. Ex., March 22. 3 O.C. S. and B. Sec., W. A. Frame, 28 Bank Street, Hillhead, Glasgow.

(7) *G.E.R. Mech. Inst.*—En., March 5. Pic., Mar. 5. Ex., March 8. Sec., A. Woolford, 16 Grove, Green Road, Leytonstone, E.

(8) *South Norwood P.S.*—En., March 12. Ex., March 24. Sec., G. R. Beckett, 28 Carmichael Road, South Norwood, SE.

(9) *Chiswick C.C.*—En., April 11. Pic., April 20. Ex., April 23. 3 O.C., S. and B. Herbert Gentry, 39 Fairfax Road, Chiswick.

(10) *Barnet £500 Competition* for work on Barnet plates, films, and papers. 19 Classes. Last day, Dec. 31. Circular from Elliott & Sons, Ltd., Barnet, Herts, England.

Digitized by Google

Trade

Manufacturers sending apparatus for examination and notice should state distinctly whether, and when, they wish it returned.

NOTICE.

Copies of the notices in these columns reach the firms concerned on the day of publication (25th February). Hence the mention of *The Photogram* for March when addressing enquiries will at once indicate the exact article in regard to which information is sought.

Catalogues, Price Lists, and Descriptive Pamphlets.—*Fuerst Bros.*, 17 Philpot Lane, E.C.—Latest chemical developers, etc.

Kodak, Ltd., 43 Clerkenwell Road, London, E.C.—A list of 715 pages, describing general apparatus and materials.

Marion & Co., 22, 23 Soho Square, London, W.—A handsome list uniform with previous issue. It lists apparatus and materials, especially mounts, albums, and other professional requisites.

The Photographic Supply Co., 5 Craven Road, Leeds.—A very full list of camera parts. The company offers a bonus in the shape of a half-plate R.R. lens to every purchaser of a set of half-plate camera parts.

George Houghton & Sons, Ltd., 88, 89 High Holborn, London, W.C.—A re-issue of Messrs. Houghton's universally known and consulted list. Its 891 pages make a perfect gazetteer of professional and amateur requisites. Post free, 1s.

A New Focal Plane Camera—the Graphic—is coming from the Thornton-Pickard Co., Altrincham. With T.-P. focal plane shutter and three double dark slides it is to cost £5 15s. 6d. Complete with Cooke focussing lens, £10 2s. 6d.

"Midgets" are still another dainty pattern of sensitised post card issued by the Rotary Photographic Co., Ltd. The size is $2\frac{1}{2} \times 3\frac{1}{2}$, and it is made as Rotograph and Rotox at 6d. per packet of twelve.

"The Art of Photographic Dodging" has proved its popularity by a sale of 4,000 in five weeks. Mr. Tylar, 41 High Street, Aston, Birmingham, has another edition ready. Post free, 4d.

"Roto" Roll Film is announced by the Rotary Co. as coming on the market during March. Particulars from the company at 14 New Union Street, Moorfields, E.C., or from all dealers.

Print Trimmers.—Messrs. Griffin of Sardinia Street are issuing a series of hand guillotine trimmers at the popular prices of 2s. 6d. quarter-plate size, 5s. 6d. half-plate. The base of the trimmer is divided into inches and eighths, and the knife gives a very clean cut.

Planastigmat is a new lens being introduced by O. Sichel & Co., 52 Bunhill Row, E.C., to meet the wants of those anxious to obtain a rapid and high quality lens at a moderate price. The No. 1 A lens, 5½-in. focus, costs £3 8s., and is listed to cover half-plate with a medium stop.

A Kodak Injunction.—An action brought by Kodak, Ltd., against the City Sale and Exchange Co. to restrain the latter from passing off goods as "Bull's Eye," has been settled by the defendants consenting to a perpetual injunction, to treat the motion as a trial, and to pay £10 damages and costs between solicitor and client.

For gaslight printing a very convenient frame has been introduced by Messrs. Butcher of Camera House, St. Bride Street, E.C. A handle is fitted to the back so that the frame can be held up to the light. The "Mecca" frame, as it is called, is made in quarter, 5×4 and half-plate sizes at 1s., 1s. 3d., and 1s. 6d. respectively.

New Plates and Papers.—Messrs. Elliott of Barnet have a "specially fast" issue of their Extra Rapid Plates on the market, and also an orthochromatic plate, yellow and green sensitive. Also a new "Lustra Matt" bromide paper. Of these we must speak after we have examined them, but our readers may be glad to make the acquaintance of these products at their dealers or from Messrs. Elliott.

Lusterine, the sensitised fabric mentioned a month or two ago, turns out to be a self-toning material remarkably simple in manipulation. The fabric is obtainable from the T. M. Rogers Company, 321 Morrison Street, Portland, Oregon, U.S.A., but inquiries in respect to it will be answered by Mr. Dawson, 29 Aylmer Road, Wendell Park, Shepherd's Bush, W.

Albumen Paper.—Messrs. John J. Griffin & Sons, Ltd., Sardinia Street, Lincoln's Inn Fields, W.C., are now issuing the well known Climax sensitised albumen paper, both "unpreserved," for immediate use, or "preserved," in which form it will remain good for several weeks after floating. Messrs. Griffin report a growing interest in albumen among professionals.

Bargains in cameras and other apparatus are offered by Messrs. H. & W. Green, who are transferring The Crown Photographic Factory to larger premises in the centre of Rotherham. They will send a list. Their factory, we are asked to say, is fitted throughout with every convenience to enable them to maintain their reputation of "all orders executed by return of post."

"The Engraver is Bourne, not made."—So runs the legend on the title-page of the first number of a new periodical, *Bourne's Bits about Business*. The publishers are Bourne & Company, 73 Ludgate Hill, E.C., and photographers, printers, and others requiring photo-engraving of any kind will not regret a post card asking for it, if only for the laughs in it. Messrs. Bourne claim to have produced more blocks in 1903 than did the South-Eastern and Chatham Railway in the adjoining station!

For the Dark Room.—A filter and rose combined is made in two patterns by the Altrincham Rubber Co., Mossburn Buildings, Altrincham, and is a piece of apparatus we strongly recommend. It has only to be slipped over the tap and the photographer is very greatly safeguarded

against spots on prints or negatives from metallic or other dirt in the water. The rose can be detached from the nozzle, and the benefits of filtration obtained also when the water is wanted in a steady stream. The price of the rose is 1s. 6d., or 1s. 9d. with an extension of tubing.

Luna Paper.—The new Luna paper, we are glad to find, loses nothing in ease of manipulation or excellence of result now that it is issued, by Messrs. Lucien Allegre, of much greater rapidity, and at a reduced price. New formulæ for the development of the paper have been worked and will be sent by Messrs. Allègre from 59A New Oxford Street, W.C.

A free exhibition of prints on Luna paper is now arranged at the Regent Gallery, 99 Regent Street, W., and will remain on view until October. Prints on Luna are invited for this exhibition by Messrs. Allègre.

Barnet Sensitive Card.—Messrs. Elliott & Sons, Ltd., are issuing their matt and glossy P.O.P., as well as their bromide, gaslight and self-toning papers, on a raw stock about as stout as a visiting card. The advantages of this greater thickness by dispensing with mounts, and generally facilitating the handling of prints in every stage of their history, cannot be gainsaid. As regards behaviour in toning bath or developer the materials are equal to the brands on lighter paper, of which the present issue is a variant. We need say no more than that to users of Barnet products.

Lumière Vidil Film.—We have already spoken of the Vidil system of daylight cartridges and its conveniences. The ability to focus each exposure and to remove each section of exposed film and develop it by itself is an important advantage which is obtained by means of Vidil films, without any constructional alteration of the camera. The Lumière N.A. Co., Ltd., have now issued their well known Planchon film in spools of this kind. The price of the Planchon-Vidil film is on the basis of 3s. 6d. per twelve quarter-plate exposures.

Digitized by Google

W. H. Harrison of Onslow Place, South Kensington, is a photographer of style whose work interested us (on a recent visit paid to his studio to inspect the new "Ideal" portrait lamp) as evidencing the taste and individuality discernible in the work of progressive professional workers. Mr. Harrison is in love with the portfolio method of presenting prints, and some very choice examples of his version of it were lying about his reception room. Equally significant, also, of the progressive spirit was the ***apparently*** careless yet really thorough way in which sitters were posed. "Being photographed" under such conditions ought not to be uncomfortable or even disquieting.

Griffin's Bromide Paper is a brand specially issued for enlargement purposes, and in putting it on the market, Messrs. John J. Griffin & Sons are in the happy position of linking its name with the excellent and inexpensive enlargers already noticed in these columns. The new bromide paper is rapid, but works with great cleanness and purity of whites. Developing with amidol or rodinal, or with the convenient M.Q. developer issued by Messrs. Griffin themselves, we found the paper to give enlargements of the highest quality. The paper is evidently coated with a bromide emulsion of properly balanced properties. It is put up in 1s. packets (four 12×10 pieces for the shilling), in rolls, and in packets of 1,000 pieces.

Sepol is a developer for gaslight paper by which a brown or sepia tone is obtained. Messrs. Griffin send it to us in cartridge form, and we find it to work in a most satisfactory manner. The paper should be given four to six times the usual exposure. It is then placed direct in the Sepol, in which it gradually develops, reaching its full strength in three or four minutes. A number of prints can be developed together, turning them over as in toning, and removing them as they reach the desired vigor. With exposure properly adjusted, the prints are quite equal to those made of black tone by M.Q. or other developer, as regards detail in high-lights and shadows, and the rich warm tone is well suited to a large number of subjects.

Liquid M.Q. — the universal metol-hydroquinone developer issued by Messrs. John J. Griffin & Sons, Ltd.— is now put up as a single concentrated solution. The hollow glass stopper of the bottle serves as a measure, and the preparation is thus dispensed in the most convenient manner imaginable: being indeed a whole development outfit in itself. For gaslight paper, the stock is mixed with twice its volume of water; for bromide papers, negatives, with four times its volume. Messrs. Griffin claim that it keeps good for months, to which we can say that, after having used our bottle at intervals for several weeks, it does not yet show signs of incipient oxidation. Liquid M.Q. is a highly pure and a highly effective and a highly convenient form of developer.

The "Supreme" Plate.—Messrs Marion & Co., 22 and 23 Soho Square, London, W., have added a new plate to their list which we may compare to their well known "Academy" brand, doubtless esteemed by many of our readers for its generous coating of emulsion, richness of silver, and ability to supply as fine a negative as one can wish. The new "Supreme" plate, as it is called, is of much greater rapidity than the fastest Academy, yet yielded us a number of excellent negatives, fine in grain and with abundant density. The plates are marked with the H. & D. numbers, and are priced on the basis of 1s. 6d. per dozen quarter-plates. Their appearance is another instance of the progress of emulsion makers towards the greatest rapidity without sacrificing the qualities which were formerly regarded as the prerogative of a medium-speed plate.

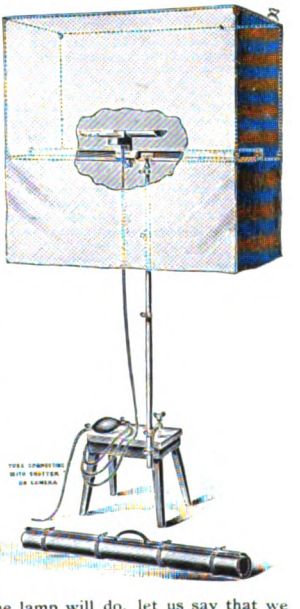
Æsthetique Mounts.—Students of Mr. Evans' articles on mounting should be careful to note that the mounting papers which he specifies, together with an immense variety of others, are issued by the Æsthetique Mount Company, St. Martins, Leicester. The papers are not specified by name, but any tint and quality of paper can be supplied by the company, and re-ordered on quoting the Æsthetique number. A sample collection of the Æsthetique papers, in mounts 10×6 in., is offered for 1s. 9d. post free. It includes a hundred different colors, shades, and textures, and affords the best means we know whereby the photographer can make the acquaintance of these modern and delightful mounting papers. We hope that the set will find its way to many of our readers, for a study of the papers in the light of what is appearing month by month on another page is the surest way to improve the mounting of prints, be they intended for exhibition or produced in a professional establishment.

A New Lens, the Dynar, is being issued by Voigtländer & Son, 12 Charterhouse Street, Holborn Circus, London, E.C. It works at *f*/6, is made in light magnalium mount, and costs in the No. 2 size of 5⅞ in. focal length, £4 5s. Our tests of a lens of this size, bluntly stated, will show its quality better than any amount of florid description.

The field is practically flat; at a point in the field 25° from the centre it is $\frac{3}{10}$ths of an inch nearer the lens than the absolute flat—an amount that is inappreciable in actual work. Astigmatism and spherical aberration are absent. At the full aperture *f*/6·2, the 5×4 plate it is listed for is covered perfectly. Actually a half-plate is sufficiently well covered. Stopped down to *f*/22 a whole plate is covered if placed centrally. The circle of illumination is 10½ in. diameter, which is just sufficient for the whole plate, while leaving plenty of reserve for the use of a rising front, if the lens is worked on a 5×4 or half-plate.

The iris diaphragm is marked with two scales, one the Voigtländer, and the other the English *f*/8, *f*/11, etc. The lens is mounted in magnalium, and is very light. The No. 2 weighs just under 4 oz. Prices are extremely reasonable for such a fine lens. That of the size under test is £4 5s.; the quarter-plate, 4¾ in., is £3 15s.; and the half-plate, 7½ in., £5.

A New Light for Portraiture.—The "Ideal" lamp is an equipment for studio and at home portraiture just brought out by Messrs. George Houghton & Sons, High Holborn, W.C., and handled in Scotland by Messrs. Gardner & Co., West Nile Street, Glasgow. The illuminant is magnesium powder burnt in a cover or cabin of prepared cloth. The apparatus is ridiculously simple, and the first question that it inspires is: Why has not such an arrangement been on the market for years? However, the "Ideal" owes its undoubted success as a means of using magnesium flashlight without flare or fume to the way in which one or two minor difficulties are overcome. In the first place, the flash-powder is ignited by a percussion cap, worked by an enclosed mechanism which, so far as we could see, behaved with unfailing regularity. Then the magnesia fumes are collected in the cloth "cabin" of the apparatus, in which they are imprisoned by drawing together the portion of cloth which hangs below the combustion chamber. The latter is then lifted off the stand in an instant and placed in the open air on a shelf or platform, when the fumes dissipate themselves in a few seconds into the outer atmosphere. The chamber itself may, if so desired, be provided with a permanent flue, with a draught up it, maintained by an electric fan, and thus form a small but powerful lighting installation in the studio. Its weight is but 9 lb., and as it packs stand, lamp and all into a flexible case 3½ ft.×6×2 in., it is well suited for professional portraiture at balls and other public and semi-private functions.



To speak of what the lamp will do, let us say that we saw it used in the studio of W. H. Harrison, South Keningston, where on Imperial Flashlight plates with a lens working no more rapidly than *f*/8 or *f*/11, fully exposed portraits were obtained in a small fraction of a second. Precisely how small a fraction we cannot say, but the subjects were photographed while moving their lips in conversation and in one case emitting a cloud of cigarette smoke—in every instance with perfectly sharp definition in the negative. The makers claim a rapidity of $\frac{1}{10}$ of a second for a normal charge of powder. The lamp is certainly capable of results which one would not at first sight suspect it of. That it will give fully-exposed negatives of full length portraits and small groups we have been amply convinced. Those who are interested may inspect it at Mr. Harrison's studio, 4 Onslow Place, South Kensington. The price of the lamp is £8 10s.

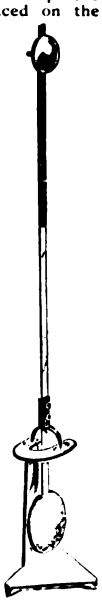
Digitized by Google

Two notable Plates.—Messrs. Mawson & Swan, 11 Mosley Street, Newcastle-on-Tyne, have encroached on the time we devote to testing materials newly placed upon the market by sending us samples of three new plates—the "Celeritas," the "Ortho B," and the "Felix." The last named we shall notice next month. Of the other two the "Celeritas" is a plate of the greatest rapidity, developing in the cleanest manner in rodinal without addition of bromide. As an extremely sensitive plate of fine grain it is equal to any which has passed through our hands, and is an altogether excellent plate for hand-camera work, portraiture, or any work where the briefest exposures must be given.

The "Ortho B" is a new issue of the plate formerly made under that name. But it bears an entirely different and more rapid emulsion. It is a very sensitive plate, with color-sensitiveness extending far into the red. Spectrum tests of it show that its range of sensitiveness qualifies it for tri-color work as fully as any plate obtainable, and it has the advantage over other panchromatic plates that it develops easily to any degree of density without needing special precaution against fog or veil. For general isochromatic work it is, of course, just as well suited, although Messrs. Mawson & Swan recommend their "A" plate for subjects without prominent reds, on the ground that amateur workers of brief experience in color-sensitive methods will find it an easier plate to handle.

Both the "Celeritas" and the "Ortho B" plates are sold at 1s. 6d. the dozen in quarter-plate size; other sizes in proportion.

A Shutter Speed Tester.—The Infallible Exposure Meter Company of Wrexham have now placed on the market the inexpensive speed tester mentioned some months ago in this column. Its principle is that of the pendulum, but, unlike other pendulum testers which we have used, it is free from the defect that even a slight wind upsets it altogether, a point of vital importance, as the tester requires sunlight when used in the day-time. The "Wynne" tester, however, is a light nickeled bar, about a foot long, pivoted about an inch above its weighted end. It swings from right to left in one second. On its upper end is a light convex mirror which reflects the light of the sun or of magnesium ribbon, and photographs as an intense black spot when the mirror is at rest, or as a black band if it is moving.



To make the test, a calibrated diagram is placed behind the pendulum. It is divided by vertical lines into one hundred divisions, so that when the pendulum is swinging exactly from end to end, it passes over each division in $\frac{1}{100}$ of a second. Hence, if we expose on the moving mirror, thus adjusted, with the shutter to be tested, each division covered in the negative by the black band represents $\frac{1}{100}$ of a second. Enough to show that the test is very simply carried out, and calls for no calculation whatever, only a little care. That such an apparatus has long been needed there is no doubt whatever. As Mr. Wynne says, what's the good of using a meter to tell you that your exposure should be $\frac{1}{50}$ of a second when your shutter at that "indicated" rapidity may work in a $\frac{1}{25}$ or $\frac{1}{60}$? The speed tester complete, with diagram and instructions, costs only 3s. 6d.

Bromide Paper de Luxe.—Whatman rough drawing paper with a bromide emulsion coating has long figured in the price list of Messrs. Wellington & Ward, and has been esteemed by those for whom the rough Wellington paper was not rough enough. It was expensive, but it was a paper by itself among the varieties of bromide. Now, however, Wellington & Ward have issued an almost exactly similar paper at the same price as their regular "S" and "R" brands, and a delicious paper it is for large work. Indeed, workers in quite small sizes should make it welcome because, being as stiff as a visiting card, it is an excellent means of evading the trouble of mounting. A print from a masked portion of a negative looks very well indeed when made on a larger piece of the new rough paper. For enlarged work, however, the "breadth" of the paper is a great help to the pictorial worker. We have not tried toning by hypo-alum or other sulphuretting processes, but we should think the paper will be quite amenable to such treatment, for which its surface naturally suits it.

A few words of caution. The roughness of the paper support exposes the emulsion to damage by abrasion, and great care should be taken not to rub one print upon another or to let the perchance roughened bottom of a developing dish touch the delicate gelatine surface. Without such care the image may be missing in large places. Further than this, ample time should be given for the paper to soften in water before development, a precaution which will reward the printer by the absence of white spots due to air imprisoned in the interstices of the paper. With these few precepts in his memory, the user cannot but be pleased with this latest addition to the Wellington series of papers.

TRADE INTELLIGENCE.

Business Changes, Changes of Address, etc.—*Messrs. W. Butcher & Sons* have taken over the business of Bessus & Co., of 84 Hatton Garden, E.C., including good-will, patents, stock, workshop and plant. They will transfer the whole of the wholesale business, including the stock, from 84 Hatton Garden to Camera House, but for the present intend to carry on the workshop at Hatton Garden. Mr. Bannister, the late proprietor, will remain as an additional London representative. All orders and correspondence, therefore, for Messrs. Bessus & Co. should be addressed to Camera House instead of Hatton Garden.

Wray & Co. have opened at High Holborn, W.C., opposite Birkbeck Bank Buildings.

H. R. & A. Scots, photo-dealers, are removing from 41 The Broadway, Stratford, E.

The Altrincham Rubber Co. have opened a London branch at 14 Thavies Inn, W.C.

A. E. Staley & Co. have removed from Aldermanbury to 19 Thavies Inn, Holborn Circus, E.C.

The Camera Construction Co. have removed from Eagle Street to a new factory—Eagle Works, Durham Grove, Morning Lane, Hackney, N.E. The company write:—"At our new premises, with greatly increased space, and an entirely new equipment of up-to-date machinery, we shall be in a position to execute with promptitude orders for wood and brasswork for the photographic and scientific instrument trades of a very high standard of workmanship and finish."

Japan and Pictorial Photography.

DEAR SIRS AND MADAM,—What a chance Araeije, Kyoto, Japan, let slip! Why did not he turn his upright "Willow at Otsu" (page 33 of *The Photogram*, February, 1904) *longways*, and call it "The Wind Howling through a Weeping Willow"?—Yours truly, F. W. SUTCLIFFE.

Whitby, Jan. 29, 1904.

PRINCIPAL CONTENTS.

Mounting the Exhibition Print. By Fredk. H. Evans.
Candlelight Photography.
The Portrait and the Studio.—III. Selection of a Subject.
Night Photography. By W. C. Motteram.
Stereoscopy: Street Photography by Night and the Stereoscope. By Ernest Law.
Something New about P.O.P.
From my Note-Book. By Alexander Mackie.
Six-Plate Promenades.—III. Charing Cross and Westminster. By H. Springall.
Figures, Facts and Formulæ. Result of the Competition.
What's What.
Forthcoming Exhibitions and Competitions.
Trade. Correspondence.

The Process Photogram

contains the whole of *The Photogram plus* the following articles and notes relating to photo-mechanical processes:—

Modified Collotype for Beginners. By H. G. M. Barstow.
Commercial Collotype.
Klimsch's "Jahrbuch," 1903.
The Functions of Tri-color Filters. By A. J. Bull and A. C. Jolley.
The Process Year Book.
Current Topics.

Digitized by Google

THE
JOHN CRERAR
LIBRARY.

Digitized by Google

A HARD BARGAIN. By HAROLD HOLCROFT.
No. 20 at the Salon, 1903.

Example for use in this month's lesson on "Mounting the Exhibition Print." See article on another page.

Digitized by Google

THE PHOTOGRAM

VOL. XI. APRIL, 1904. No. 124.

The Photo-Secession (page 101).

SADAKICHI HARTMANN. *By R. Eickemeyer, junr.*

Digitized by Google

MOUNTING THE EXHIBITION PRINT

BY FREDK H. EVANS.

This Month's Exercise. Print:—"A Hard Bargain," by Harold Holcroft, M.A., F.C.S. Mounting Papers:—Lindenmeyr's "Nut Brown" (this month's covers), Lindenmeyr's "Matt Ruskin Special Black," January inset, Lindenmeyr's "Mordore" (February covers), and Lindenmeyr's "Court Grey" (March covers).

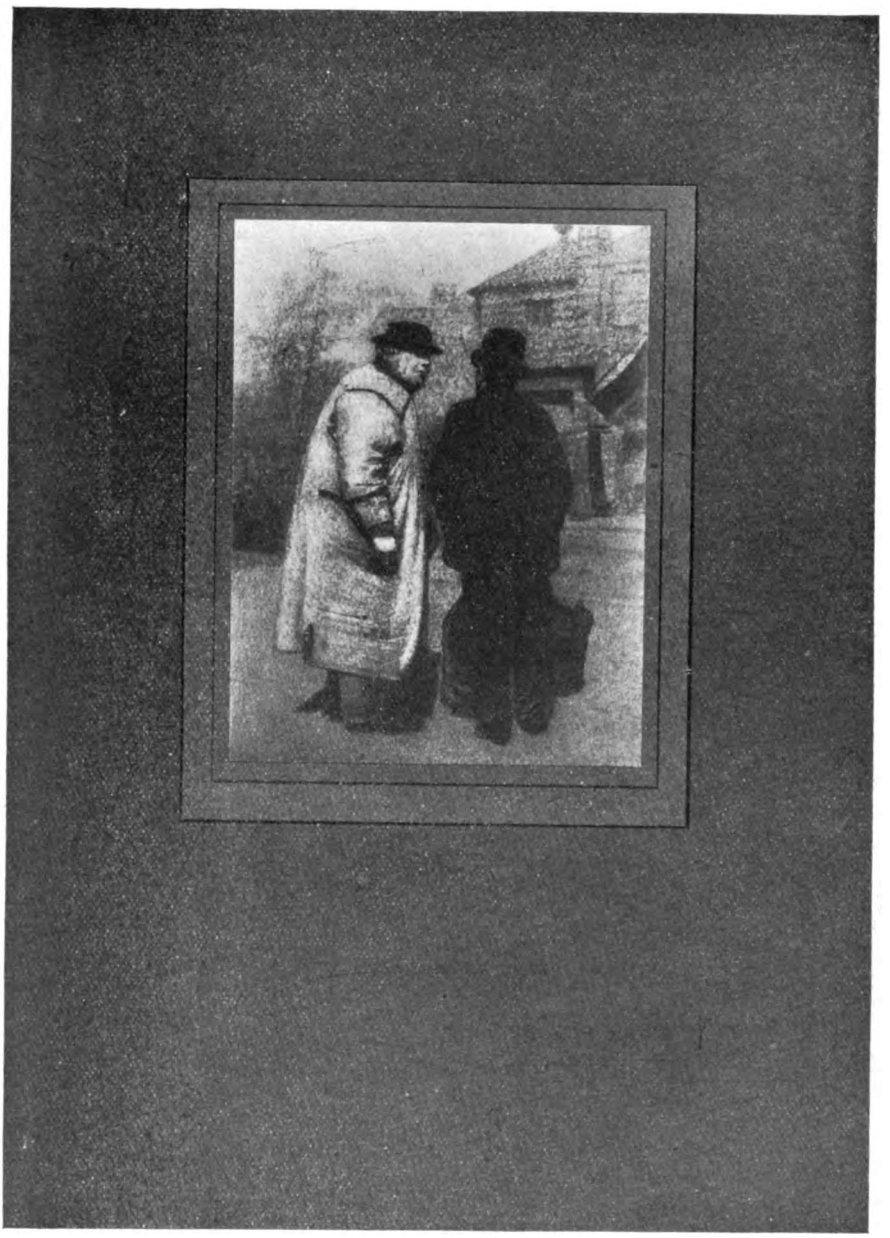
MR. HOLCROFT'S picture was framed up close when exhibited at the *Salon*, therefore I am entering into no rivalry with him in suggesting a mounting for the readers of this journal.

The picture is first to be cut out as accurately as possible, and then stuck on to the nut brown paper forming the covers for this month, showing a margin of $\frac{1}{8}$ in. at top and sides, and $\frac{21}{32}$ in. at foot. This has then to be stuck on to a piece of the black paper described and given in the January issue, trimming this away so that it shows but a narrow line round the nut brown paper, less than $\frac{1}{32}$ in. When this is accomplished, it is in turn to be stuck on to a piece of the Mordore paper as given by the February covers, and that is to be trimmed to show margins as follows:—$\frac{5}{16}$ at top, $\frac{3}{8}$ at sides, and $\frac{1}{2}$ inch at foot. We have now to stick this accumulation of picture and papers on to a further piece of the black paper already used, trimming it away again to a narrow line as before, less than $\frac{1}{32}$ inch. We are now ready to put the whole on to the final support, the Court Grey paper, to margins of say $1\frac{1}{2}$ at top, $1\frac{5}{8}$ at sides, and 4 in. at bottom.

The effect of the whole is that of a picture in a rich inner frame; we have used five pieces of paper, and yet the effect of the whole is quite simple and dignified. The pale brown of the paper next the picture provides a neutral contrast or set-off to all parts of the composition, sky as well as foreground; the Mordore suggests a dull gold between two black ruled lines, and agrees well with the color of the picture. Of course, the effect for the reader is but an approximation, for though the color of the reproduction is as like the original as could be managed, it is not of the richness and effect of the latter. Still, it affords excellent practice in cutting up mounting papers, and the plan suggested will doubtless prove available, with modifications, for the worker's own pictures. For that reason I would suggest that an extra stock of the papers named in these articles should be provided by my readers, as the amount given by the covers of the magazine is necessarily very limited.

A simplification of this mount would be to do without the nut brown and the first black line, letting the picture come directly on to the gold—the Mordore—with the black line outside it as now. If the first black line had been next to the picture instead of having the nut brown intervening, the effect would have been too rigid an enclosing of the picture; the black line being so close would have been too obvious and arresting to the attention; as now schemed, one feels no portion of the mounting as obvious, but only realises the rich general effect. The quiet, soft, rough-surfaced grey of the bottom mount forms an excellent foil and background to the gold inner frame.

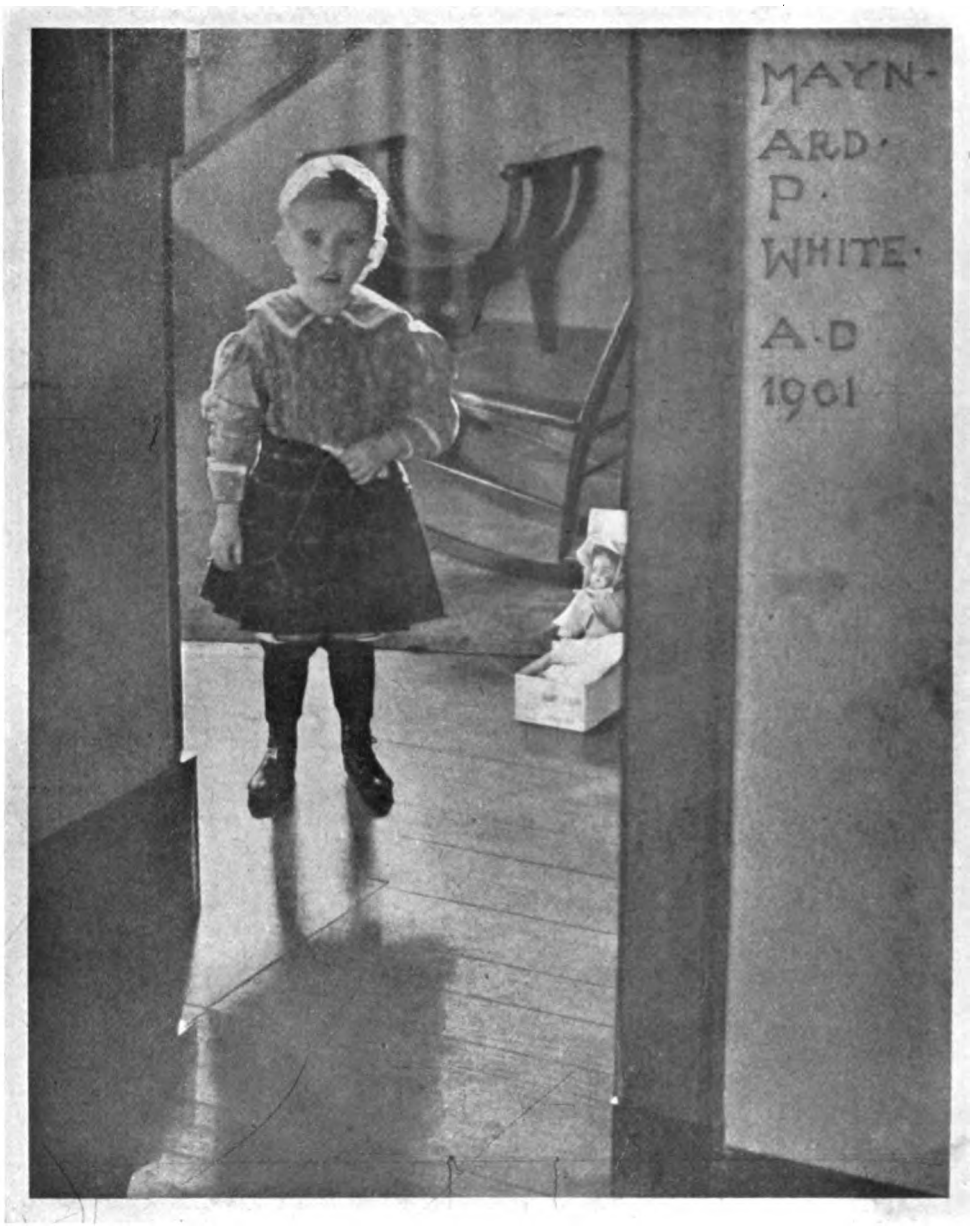
Digitized by Google



MOUNTING THE EXHIBITION PRINT.

The tinted supplement of Mr. Holcroft's "Hard Bargain," presented this month, is to be mounted, as shown above, according to the directions on the opposite page. A further step in modern border-mounting will be taken next month, with Chas. H. L. Emmanuel's delicate "House on the Wall" as example. The sixth lesson (June) will pursue the use of narrow borders.

Digitized by Google



PORTRAIT.
By Clarence H. White.

The Photo-Secession (page 101).

Digitized by Google

The Photo-Secession.

The fact that nearly all the leaders in pictorial photography in America are banded in The Photo-Secession—of which Mr. Alfred Steiglitz is the life and soul—justifies the prominence given to the following account of the Secession's recent exhibition at Pittsburg. The critique is from the pen of Sadakichi Hartmann, whose portrait, by R. Eickemeyer, junr., appears on the first page of this issue. The notes and illustrations will be concluded next month.

"A COLLECTION of American Pictorial Photographs as arranged by the Photo-Secession and Exhibited under the Auspices of the Camera Club of Pittsburg, at the Art Galleries of the Carnegie Institute, Pittsburg, Feb. 1904."—Such is the full title of what may safely be described as the finest and most interesting exhibition of pictorial photography ever held in America. It consisted of about three hundred prints contributed by fifty-four workers. From the standpoint that every picture admitted was made with deliberate motive, the collection was a decided success. The effect as a whole was pleasing, almost every exhibit being to some degree interesting. Even those who had nothing original to say, having had their sense of tone refined and developed by previous exhibitions, were thus able to express themselves without glaring crudities. And although the meaning and intention of some were hard to discover, they were at least void of offence, if they could not boast of any positive charm. The general tendency was towards less pretentiousness, both in point of size and in the character of mounting and framing. The exhibitors seem to have no longer the free run of a packing paper store. Nearly all the work exhibited seemed to be in a marked degree under the same influence, and possessed, therefore, a sameness in color, quality, and idea. The average merit was lowered by the absence of several well known photographers whose work would have added weight, notably F. Holland Day, Miss Ben Yusuf and Miss Johnston, Maurer, Dumont, Lee, and Genthe. The photographers who profess high artistic aims, who have the ability to practise them, and who scrupulously live up to their ability, are necessarily few in number, though steadily increasing, and we can only express regret that the exhibition was not an absolutely representative one.

The aim of the Photo-Secession as set forth in the catalogue is "to hold together those Americans devoted to pictorial photography in their endeavor to compel its recognition, not as a handmaiden of art, but as a distinctive medium of art." It is the old problem that cannot be definitely settled, as it is largely a matter of individual opinion. There is too much theorising of late in the ranks of the pictorial photographers. They would serve their cause better by simply striving to make their pictures expressions of beauty, than by engaging in futile scholastic discussions as to whether photography can be reckoned among the fine arts or not. They do not need to be afraid to speak of art, for where *selection* is used art of some sort enters in; and so the photographer may show himself an artist whenever he selects in taking a photogram, or in developing or printing it. But when they say, as some of them are apt to do, "I use a camera, the painter uses a brush—that is the whole difference between us," they talk nonsense, as the hand of the painter has every portion of his technique under direct control. "But," argue the advanced photographers, "we, too, control our results; we, too, select our subjects, and by local development, by restrainers, fixing baths, and other means regulate the negative in accordance with our ideas; finally, we modify the print with a brush, giving accent where accent is needed, and if

Digitized by Google

POLISHING BRASS.

By Mrs. Myra A. Wiggins.

Mrs. Wiggins is a refined pictorial worker whose home is at Salem, Oregon. We believe she is a member of the Secession, although we are without documentary evidence of the fact.

Digitized by Google

CLEARING AFTER THE STORM.
By Rudolf Eickemeyer, junr.

The Photo-Secession (page 101).

Digitized by Google

necessary removing the superfluous. In what way is our process so different from that of the painter?" Perhaps they are right. But what is the use of arguing? as comparisons will never settle the question. Call it then by what name you will and consider the result.

A very complete and interesting exhibit was furnished by Joseph T. Keiley. It embraced not less than twenty prints. He is a glycerine-platinum worker *par excellence*, and much of the tendency towards blurred effects may be traced to him. It seems to be a deep-rooted conviction of his that photography should hold as it were a smoked glass up to Nature. In reality the blurred line is not essentially more artistic than the sharp, well-defined line; and a washed-out effect is not necessarily better than another as more spiritual, even though it may be labelled "mystic." The majority of his prints—direct developments from soft, thin negatives—were of that charming grey that suggests color so well, while others showed beautiful brown-black gradations. Among his exhibits were several landscapes, some evidently studies, others complete expressions of a mood of Nature, but in all of them one could feel the presence of a very artistic spirit, expressing itself in a noticeably individual manner.

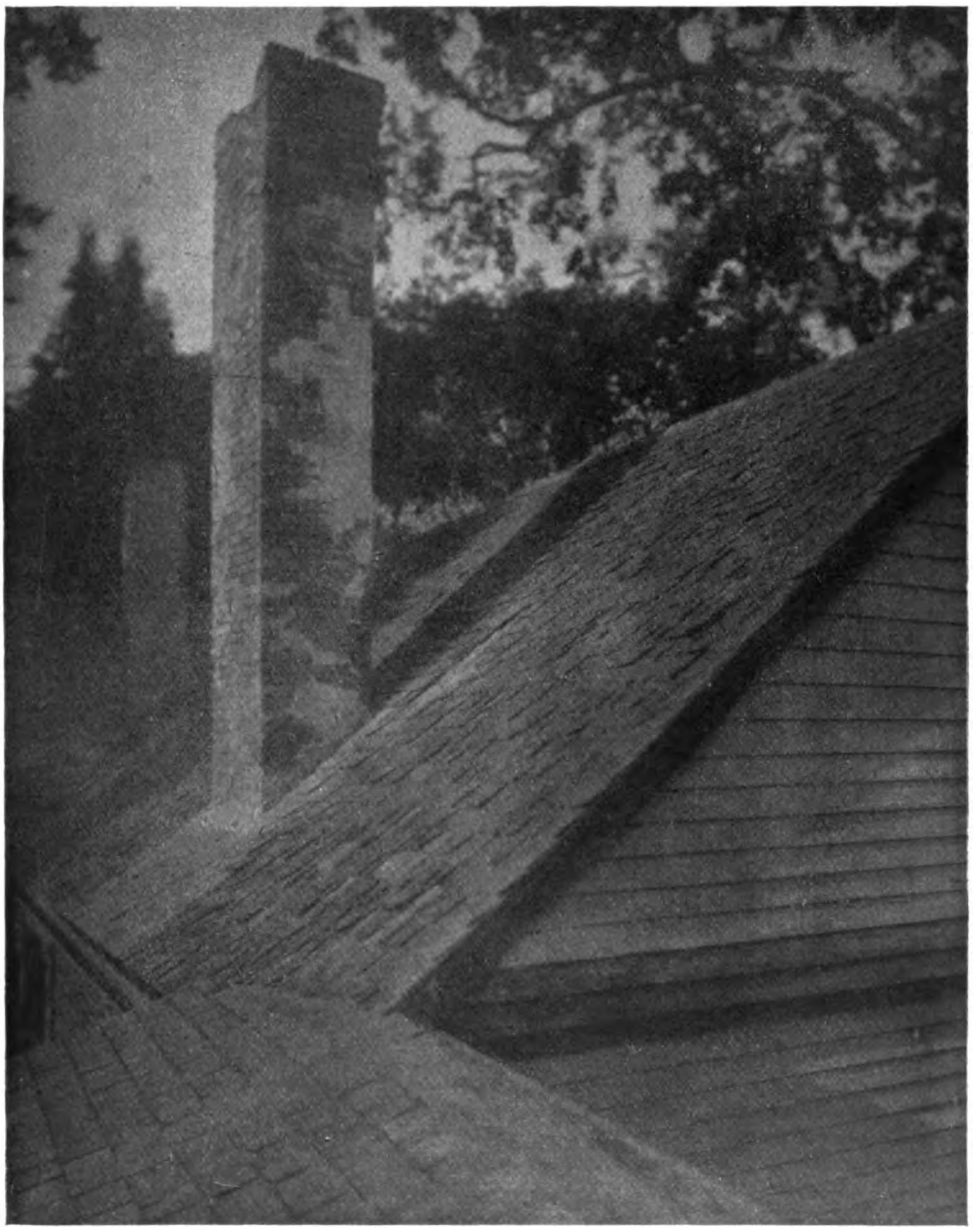
A decidedly new note was struck by Alvin Langdon Coburn, a cousin and pupil of F. Holland Day of Boston. His "Ipswich Bridge," the largest print in the collection, presented a well balanced composition and a rare feeling and understanding—most remarkable in so young a man, as he is only twenty—for lines and special beauty, while his "Gables" is an entirely individual production. He has the gift of seeing subjects, insignificant in themselves, in a big and convincing way. His portraits are at present rather weak—he does not yet know how to place the human figure—but he has made such rapid studies during the last two years that one might expect almost anything from him should he continue to progress in the same manner.

Gertrude Käsebier seems to have lost some of her old-time power. She has lately fallen into the habit of imitating the successes of others, instead of boldly following the trend of her own individuality. Her old dark-tone pictures are still the best she has to offer. Also Frank Eugene had nothing new to show. He never took photography very seriously, and the latest news of him is that he is painting portraits in Munich, and only occasionally using his camera "as a handmaiden of art."

The domestic gem was well taken care of by Clarence H. White and Edmund Stirling. White of Newark, Ohio, is steadily improving; his ability of composition, as shown in his illustrations for "Eben Holdin," is far ahead of anything he has previously done. The figures are, for the most part, charmingly posed with all the *savoir faire* of the modern illustrator—and true to the character and situation they embody. Perhaps the readiest way to fully appreciate the excellence of his work is to begin by recognising its limitations. Despite all the "impressionist" effects he is striving for, as, for instance, in children's portraits, it is in a way provincial, though I confess that it is more easy to feel conscious of this than to describe exactly in what it consists. He is not unquestionably *local* in the choice of his subjects, but there is a certain baldness and awkwardness in his work which even his masterly rendering of delicate tonality and subtle light and shade effects cannot perfectly counterbalance.

R. Eickemeyer, jun., and Yarnall Abbott were not as well represented as one might expect of two such prominent pictorial workers. They apparently did not understand the aim of the exhibition, which was not so much to make a display of novelties, but to give each worker an opportunity to show the best work he had done during his career. W. B. Dyer, on the other hand, came out with flying colors. He is particularly fond of idealised representations of the human figure.

Digitized by Google



GABLES.

By Alvin Langdon Coburn.

The Photo-Secession (page 101).

Digitized by Google

SIX-PLATE PROMENADES

ROUND STRATFORD-ON-AVON.

By CATHERINE WEED WARD.

April, in which Shakespeare was born and died, and when the memorial performances occur, seems the fitting month for a ramble in Stratford-on-Avon. The splendid service of the Great Central Railway, from the north as well as from London, with its quick breakfast trains and its extremely cheap inclusive rates for return fare, luncheon in Stratford, and dinner in the train, is an extra inducement. The London walks by Mr. Springall will be resumed next month.

IT is best to go first to Shottery, as the morning light is best for the Hathaway Cottage—the earlier the better. It is about a mile by any of the several footpaths. Starting from the station, pass down Alcester Road into Back Lane, past the rear of the vicarage grounds to Evesham Place. Here a footpath on the right, opposite the end of Chestnut Walk, leads across the fields, opening finally into a lane. Then, crossing a stream, you pass around a bend in the road and the cottage is visible on the left hand (1). Returning to Stratford by the same path, a few steps down Chestnut Walk lead to Rother Street, and, passing the vicarage, an open square is soon reached in which is the American fountain. Turn up Meer Street, which brings you out nearly opposite the birthplace (2). As with all the places managed by the Shakespeare Trust, you cannot use a camera in the building or grounds without permission and a rather heavy fee. This is necessary, however, to prevent crowding in the small space. Passing to the east along Henley Street, you turn to the right, cross Wood Street and go down High Street a few yards, when you reach the Harvard House (3). This is one of the best old bits in Stratford, and has an interesting history. As the street is narrow, you will need a wide-angle lens. Retrace your steps to Wood Street and turn down Bridge Street. This once had a row of houses down the centre. Just before reaching the Clopton Bridge you turn slightly to the right, past a woodyard, and from the disused tram bridge get an excellent view of the Shakespeare memorial and spire of Holy Trinity Church (4).

Just beyond the bridge a small gateway admits to the Town Meadows, and several views of the Holy Trinity (Shakespeare's church) can be made from the river bank (5). Passing through the meadows and over a little bridge near the weir you have a fine view of the church, and then cross the Mill Bridge into Mill Lane, which leads you around the church and through the street called Old Town to Church Street. A few yards on the right is the Guild Chapel and Edward VI. Grammar School. My view (6) was taken to exclude the adjoining almshouses in order to make the Guild Tower more prominent. The Tumbledown Stile, one of the two added pictures, is opposite the iron park gates of Charlecote, between three and four miles from Stratford. Here, according to report, Shakespeare was caught after the alleged deer-stealing frolic.

Digitized by Google

1. Anne Hathaway's Cottage, Shottery. 2. The Birthplace, Henley Street. 3. The Harvard House, High Street. 4. Memorial, and Holy Trinity Church.
5. Holy Trinity Church. 6. Edward VI. Grammar School. 7. Holy Trinity from the Memorial Garden. 8. The Tumbledown Stile.

Digitized by Google

A HOME-MADE TELEPHOTO LENS.

BY H. M. THAMES.

A chapter from "Telephoto-Work," recently published. The method here described provides an inexpensive means of learning the elements of telephotography.

THE telephoto lens is really a long focus lens of peculiar construction, having a series of different foci, obtainable by the adjustment of its component parts. It is composed of two elements, positive and negative; the positive being an ordinary photographic lens working preferably at an aperture of not less than *f*/8, while the negative is a double concave lens of high or low power (short or long focus), according to requirements, the most generally useful being of half the focal length of the positive. The function of the negative lens is to take some portion of the image produced by the positive, and to magnify it. The extent of this magnification is governed by the distance dividing the two elements, the less the separation, the greater the magnification, and *vice versâ*.

In some earlier trials with the monocle as a negative element,* very low powers were used, so low that the most practicable method of obtaining the various magnifications was by using monocles of different powers singly, or in couples, in one position, viz., close up to back combination of positive lens. The greatest objection to these lenses was the length of exposure consequent upon the necessity of stopping the positive down considerably. In more recent experiments a monocle of 2½-in. focus has been used with the same positive, viz., a 5-in. Euryscope. With this combination a great improvement has been noticed in every respect. The magnification is higher, the positive requires less stopping down, a more brilliant image is obtained, and the different foci are obtained with the one monocle instead of two or three.

To make the attachment, two tubes of brown paper were made, one fitting loosely inside the other, the length being slightly greater than the distance between lens and monocle at the greatest magnification it was possible to use. The inside diameter of the smaller one was a trifle greater than the diameter of the inside of the lens flange (*i.e.* where it is screwed to receive lens).

Two extra lens panels were made: one had a central hole in which the larger tube just fitted; the other, a hole to suit the smaller tube.

To make these tubes, take a piece of brown paper as wide as the length of the tube, and long enough to go round a mould of the required size (a P.O.P. or similar tube will answer) six or eight times; paste this well with thin glue, all but the first turn, and roll tightly round the mould; slip it off, and set aside to dry.

When fastening the larger tube into its panel, allow twice as much to project on one side (the front) as the other; fasten with glue and strips of glued paper, bound round the tube and having one edge nicked with scissors into a kind of fringe, so that this fringe can be pressed in close contact with the panel (fig. 1).

The smaller tube should just go through its panel, so that the end is flush with one surface (front); fasten with glue and paper as before (fig. 2).

The monocle had a strip of glued paper rolled tightly round it until large enough to fit loosely in the end of the larger tube; on either side of it, in this paper cell, a strip of thin card was glued to prevent lens slipping out

* *The Photogram*, October, 1902.

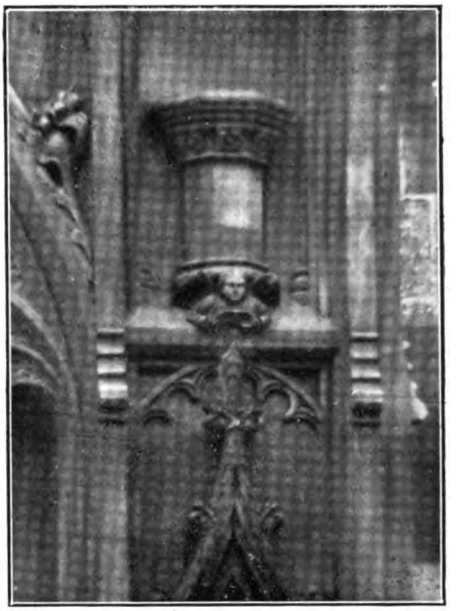
Digitized by Google

(fig. 3). When dry, a slip of velvet was glued round it to make it fit tube tightly. The outside of the smaller tube was covered with velvet, so that it fitted inside the larger one tightly and yet moved smoothly.

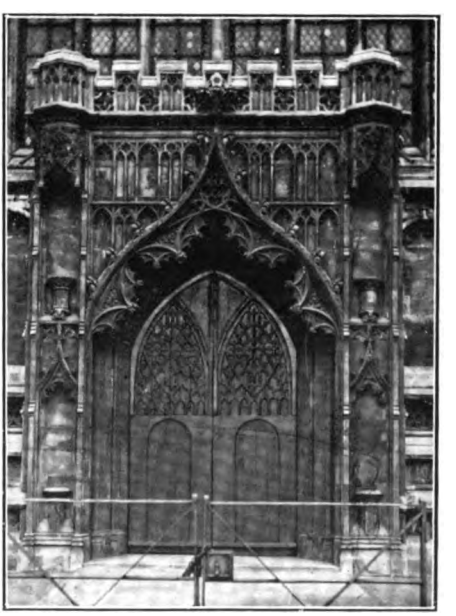
The panel of this tube is to carry the positive lens: either a second flange is required, or some arrangement must be made to permit of lens and flange being removed quickly and easily. Make four small buttons of hard wood (two for telephoto panel and two for camera panel) of the shape of fig. 4. The piece removed at A should be exactly the thickness of the lens flange. Drive a screw in the lens panel just where one of the screw-holes in flange will come, file off the head so as to leave a pin standing out of panel, which will pass through flange screw-hole from the back; while the flange is in position, screw the two buttons on so that they can be turned (stiffly) over the other two screw-holes, and so keep flange securely on the panel. Do the same to camera panel, and a few seconds will remove lens from one panel to the other (fig. 5).

The panel of the attachment may be trimmed to shape shown by dotted lines in fig. 5 for neatness' sake.

For the scale showing the number of magnifications, a piece of brass is required about $\frac{3}{8}$-in. wide and as long as the smaller tube. It should be curved slightly to fit the tube, and have a hole drilled at either end to take a small rivet. Two small brass plates about $\frac{1}{2}$-in. square will be required, slightly curved to fit inside the tube and also drilled to take the rivet: it (the rivet) should be put through the plate, then the tube and out through scale plate, where it should be riveted.



With R.R. lens and 2½-in. monocle. *f*/6 on positive lens. Exposure, 1½ sec.



From the same standpoint: taken with Euryscope lens alone at *f*/16. Exposure, 1 sec.

The attachment is now practically complete. All inside parts should have a coat of dead black, the outside a coat of any preservative varnish. Gum a strip of paper, which has been divided into $\frac{1}{4}$-in. spaces, on the focussing

Digitized by Google

screen, and focus some distant object so that its image is, say, ½-in. in height (two spaces on the strip of paper). Remove lens from camera, put negative lens in position in the back of larger tube, which should have a strip of card glued in to act as a stop to prevent lens going too far in; put the panel in the camera, the smaller tube inside the larger and the lens on the front panel. Now by adjusting the position of the lenses, by pushing in or pulling out the smaller tube, and by the rack and pinion, focus the same object until an image of an inch in height (four spaces) is obtained. Make a scratch on the brass plate on the inner tube at the edge of the outer tube with a sharp instrument, and number it 2: readjust lenses and camera extension until the image is 1½ in. in height (six spaces), and mark as before and number it 3,

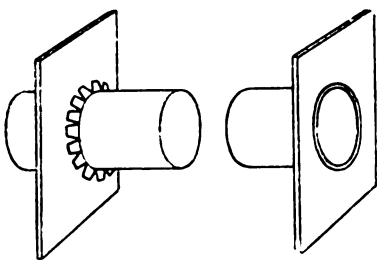


FIG. 1.

FIG. 2.

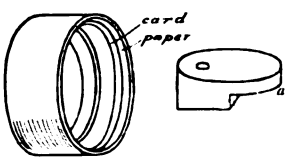


FIG. 3.

FIG. 4.

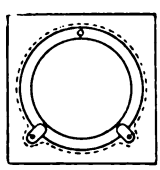


FIG. 5.

and so on until the fullest camera extension and the greatest magnification are obtained. Make these marks and numbers as deep as possible, and then with the finger rub in some black enamel, so that they are easily distinguished.

It was found that with a camera extension of about twelve inches, magnification up to six diameters could be obtained, using the 2½-in. monocle, which was a distinct advance on the earlier trials.

The simplest method of finding the focal length of the combination is to multiply the focus of the positive lens by the number of magnifications. The *f*/ value of the stop used on the positive is also found by multiplying by the magnification. Perfect rigidity in both camera and stand is imperative, and the camera should have ample swing back and rising front.

The best results will always be obtained by the use of a positive of the greatest rapidity, combined with great equality of illumination. Focus carefully, and with the stop to be used. Choose, if possible, the best atmospheric conditions—*i.e.* as free from haze as possible, particularly where very distant views are the object. An "Iso" screen will probably be found useful when any haze or fog is present.

The exposure required will most likely be less than actually indicated by the stop used in photographing distant scenery, in order to secure sufficient contrast in the negative.

Development should be slow, and with developers which tend to give density with clear shadows, or with an excess of the reducing agent when using pyro-soda or pyro-ammonia formulæ.

Digitized by Google

ENLARGEMENTS VIÂ REDUCTION

HOW TO USE AN ORDINARY MAGIC-LANTERN WITH 4-IN. CONDENSERS FOR ENLARGING FROM QUARTER-PLATE AND LARGER NEGATIVES. BY CLARENCE PONTING.

PROPERLY used, a cheap optical lantern can serve the amateur worker quite well as an enlarger. Such a lantern is fitted with condensers 4 in. in diameter, so that a 3-in. square is the largest area it can take. Negatives made in small cameras, such as the Brownie or Scout, can be enlarged in it as they are by either of the methods I describe; but larger ones are first reduced, so that the area to be enlarged falls within a 3 × 3-in. space. In the course of making this reduced negative considerable improvement can often be made in its enlarging quality.

The trouble in enlarging direct with the lens supplied with the lantern, is that usually its chromatic correction is bad (the sharply focussed enlargement is unsharp on development), but I must say that the lens of my 30s. lantern from Benetfinks is good enough for enlargements in which a little diffusion does not matter. In fact, I use it for portraiture direct on a half-plate stand camera, its working aperture being about *f*/4, and for large heads it works well. The illuminant of my lantern is incandescent gas, and let me strongly recommend this light, in preference to any oil lamp, for shortness of exposure and absence of smell.

Now as to making your reduced negative. A transparency by contact, the full size of the negative, is made on a plate of "lantern" brand. The transparency should look quite different from the usual lantern slide—not plucky and brilliant with clear glass in the highest lights, but much flatter and with a little veil over the whole. Give more exposure, and use a weaker developer than the makers give, in order to get this quality.

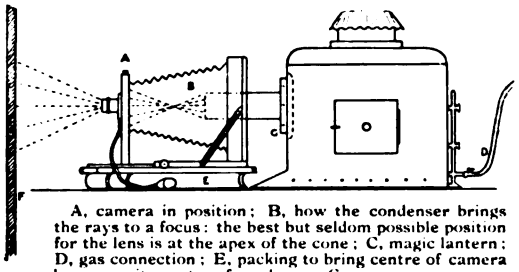
This transparency is then placed in such a position that the light shines through it (a window facing the sky does admirably), and is "copied" in the camera on to a lantern plate. Use the rapid variety, and develop the negative to moderate density—not too thin, nor too dense.

Remember that 3 × 3 in. is the area from which we can enlarge. It is well to fix a mask of black paper on the focussing screen, having a $2\frac{3}{4} \times 2\frac{3}{4}$ cut-out. One cannot then overstep the limits set by the enlarger.

Now, having our small negative, or better, a number of them, we can set to work enlarging. The first thing is to set up your camera exactly as though you were about to take a picture. You also have your lantern set up and the illuminant turned on. Now remove the reversing back of your camera, and also the "draw tube" carrying the lens of the magic lantern. Place these on one side, and bring your camera up to the lantern in such a manner that the back comes right up to the condenser tube of the lantern. When in this position, put in the carrier and reduce negative. The rays of light which pass through the condenser should fall in a circle round the back of your camera lens. To effect this, the camera must be made level with the condenser cone, by propping it up with books, etc. Then rack the camera out or in, as the case may be (it all depends on the size of the enlargement), and you will find the image of the reduced negative projected,

Digitized by Google

if a piece of white paper be pinned to the wall. This is sharpened by turning the focussing screw of the camera. The image can be made larger or smaller, by moving camera and lantern nearer or further away from the wall, focussing till an image of the right size is found, and finally setting the image quite sharp. You may then put in a small stop, such as *f* 22.



A, camera in position; B, how the condenser brings the rays to a focus: the best but seldom possible position for the lens is at the apex of the cone; C, magic lantern; D, gas connection; E, packing to bring centre of camera lens opposite centre of condenser, G.

In fixing up the bromide paper, a yellow cap for the lens is a great convenience. The paper can then be adjusted in position by the eye. Without the yellow cap we must mark the white paper on which we focus and pin the sensitive piece upon it by the light of the dark room lamp, capping the camera lens. Lastly, exposure,—say thirty seconds when enlarging from a thin negative to 10 × 8 on rapid bromide paper with the lens at *f* 22. But the proper time can be found only by trial.

Using the camera lens in this way gives a very crisply defined enlargement. The lantern lens in place of it will not render the enlargement so sharply, but the peculiar softness which a lens with chromatic aberration gives, is a positive asset when enlarging certain classes of subject—large heads, for example. In using it for this purpose, the lantern is employed just as in exhibiting lantern slides, the negative being inserted in the usual carrier.

If you wish to save the expense of large dishes, melt some dripping,* and run it into lids of large cardboard boxes, taking care to see that the corners and sides are well covered. Then run the fat out whilst still liquid, and allow the boxes to cool. When cool, give a rinse under the tap, and they will be ready for use. These will be found quite as useful as the very expensive dishes sold for the purpose, and their cost is nil.

More permanent dishes can be made by lining a wooden tray with thin oilcloth from the furnishers, or if the tray is properly made and caulked it is sufficient to give it a couple of coats inside and out of shellac varnish.

Of course I am taking it for granted that the lanternist knows all about centring his light, etc., for a good deal depends on this. Parts of large negatives, such as heads in groups, or little bits, can be enlarged without making a small negative, by simply withdrawing the carrier and substituting the negative, adjusting it so that the part desired shows on the wall. It will be found safer to cover the bottom part of the lantern with the focussing cloth, for the air-holes and back of a magic lantern let out a great deal of light which, falling directly on to the bromide paper, would fog it and thus spoil the picture. The bromide paper will stand a great deal of reflected light, however, without coming to any harm. Film negatives must be placed between two glasses clamped with elastic bands, and are then placed in the carrier in the usual way.

There is little to learn beyond what I have set forth here, and I am hopeful that the virtues of enlargement as a discoverer of "the picture within the print" may be properly appreciated. Not to enlarge is to miss half the possibilities wrapped up in one's negatives.

---

* Better, paraffin wax, or best composition candles.—Eds.

Digitized by Google

THE SCOTTISH SALON.

THE Scottish National Photographic Salon (to give its full title, for we hurt certain susceptibilities by writing of "The First Scottish Salon" last month) was an exhibition of sufficient importance to warrant recognition beyond the paragraph in our last issue. In *Photograms of the Year 1904* ten or a dozen pictures by hitherto unknown workers will be reproduced; meanwhile, a view of one portion of the room, and small reproductions of two of the specially commended lantern slide subjects, should be of interest. For the former we are indebted to J. W. Eadie, who designed and executed the decoration and did most of the hanging.

The real importance of the exhibition lies in the extent to which it brought forward the work of unknown photographers, whose diffidence has prevented their submitting to the selection committees of the "Royal" and the "Salon." Some seventy names, unknown in our national shows, are to be found in the Scottish list, and while some of the work is not up to London exhibition standard, a good deal is well worth its place on the walls, and gives promise that with more assurance, born of competition and comparison, its authors may recruit the higher ranks of exhibitors. Criticism of individual works that are not before our readers is of little value, so we merely mention a few of the little known people whose pictures seemed worthy of special notice:—James A. Angus, J. Bruce Cameron, J. C. Robertson, Alex. Allan, John Hepburn, J. Peat Millar, Alex. Wilson Hill, John Spark and Alex. Geekie. Arthur Hawes, J. B. Maclachan, J. W. Eadie, O. C. Baird, Dan Dunlop, John Moffat, James Patrick, George Cleland, Archibald Cochrane, and W. Drummond Young upheld their reputations, while J. Craig Annan, W. Crooke, and Percy Lewis very

THE SCOTTISH NATIONAL PHOTOGRAPHIC SALON. Decoration designed and photographed by J. W. Eadie.

Digitized by Google

greatly strengthened the exhibition with large collections of their most masterly work.

Such a collection cannot fail to have a great effect upon the younger exhibitors, and upon other members of the federated societies, while the moving of the exhibition from place to place (Glasgow next year, and probably Brechin in 1906) gives it a special propagandist value.

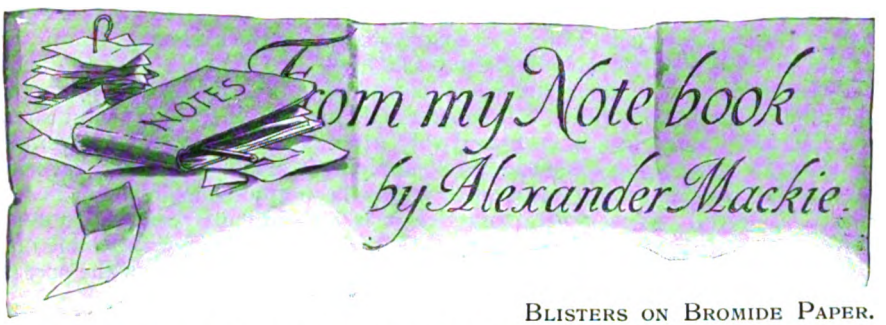
The lantern slide competition was very large, and with an unusually high standard of quality, both artistically and technically; and although lantern slide subjects are not necessarily suitable for half-tone reproduction, we give small representations of two of the three selected by the judges for individual mention. The third, a very beautiful panoramic view by Archibald Campbell, is too small in the contact print to reproduce at all satisfactorily.

THE LAST ROSE OF SUMMER. By Jas. Donaldson.
Lantern Slide Section—The Scottish Salon.

The organisation of the Federation has been mainly the work of Henry Coates and J. B. Maclachan, while the arrangement of the exhibition itself, the collection of the pictures, and the production of a thoroughly good well arranged catalogue, were the work of Alex. Mackenzie, exhibition secretary, with the able assistance already mentioned of J. W. Eadie. The very great success attained in one year, without the support of the great Edinburgh and Glasgow societies, says much for the earnestness of those in the Federation, and if the metropolitan bodies join the Federation we can assure them that the benefits will not be all one sided.

"GLEANING." By Robt. W. Steel.
Lantern Slide Section—The Scottish Salon.

Digitized by Google



Blisters on Bromide Paper.

Blisters are not a constant trouble with bromide paper, but they occur occasionally. In using a sample of paper which is liable to blister, the precautions which are well known in connection with the same defect in albumenised paper are equally efficacious. Blistering on bromide prints generally occurs when the prints have been removed from the fixing bath to running water, and arise from a change of temperature partly, but more frequently from too rapid action in lowering the density of the solution absorbed in the film. The remedy is a simple one. Allow the prints to remain quiescent in a dish containing a small quantity of water so as to soak out a considerable amount of the hypo before resorting to the more drastic method of washing.

Removing Mineral Naphtha from Methylated Spirit.

The presence of mineral naphtha in methylated spirit is a hindrance to its employment in many ways, but in cases where some degree of dilution is permissible, a simple means exists of separating the mineral naphtha from the other constituents. If 20 per cent. of water be added to the spirit as supplied, it will become milky white, owing to the mineral naphtha being thrown out of solution. After standing, the naphtha will rise to the top, leaving the remainder clear and free from it. The clear portion may be removed by means of a syphon, or the bottle containing the mixture may be stood cork downwards, so that the film forms at the bottle's bottom, and by careful manipulation, a considerable portion of the contents may be removed before the ascending air-bubbles disturb the separation. The proportion of water it is necessary to add is not definite because various samples of methylated spirit differ, but 20 per cent. will generally be found efficacious.

Spotting Lantern Slides.

A great many lantern slides are exhibited on the screen in what is really an unfinished condition—that is, wanting the few touches of the spotting brush which would always be considered necessary in the preparation of a print. In preparing a print, one would always carefully tone with a brush, and color the white spots which arise from dust, from opaque particles in the film of the negative, from pinholes spotted out in the negative, and from other causes. It is easy to do so on a print; it is no less easy to do so on a transparency. The conditions, however, are different, and the method is therefore not precisely the same. In a print, one can use color which in a patch would equal in depth the lowest tone of the picture, and yet match a light tint, by applying it with what is called a dry brush, or by dotting the color on or stippling it. A lantern transparency has to be magnified, and though a dotted or stippled patch would certainly be better than a space of white, the artifice would be easily observed. A transparency requires the

Digitized by Google

tone to be matched in an even tint, and, with water colors, using plain water as the medium, it is not by any means an easy matter to apply a light tint to the gelatine surface of a transparency without the absorbent character of the gelatine giving rise to various difficulties. To make an opaque dot is easy enough. But by using a viscous instead of a flowing medium, many of the difficulties do not arise. The most simple medium is a strong solution of gum arabic. With this, a comparatively attenuated mixture of color may be made to give considerable opacity by applying it heavily, and there is some facility for manipulating the tint after it has been applied as in the ordinary use of oil colors. With a little practice it is not difficult to apply an even tint over quite a large surface, and a little artistic knowledge will enable one to work up a hard black and white slide so that its appearance on the screen is quite presentable.

Amidol and its Stains.

Amidol is an admirable developer for bromide papers—perhaps the best there is, but it has disadvantages. Solutions containing it cannot be relied upon to retain their developing power for more than a few days, and it is advisable, therefore, to mix the developer as shortly before use as possible. This, however, is only a minor trouble; a more serious matter is the difficulty of preventing minute particles flying about unless extreme care is exercised in handling it. A minute particle settling on a drying print has a disastrous effect. It causes a mahogany-colored stain which penetrates deeply into the paper. Doubtless many have experienced the stain without being able to trace it to its source. It is a good precaution to keep amidol in its solid state out of the dark room and workroom, and to mix the solution, when required, somewhere quite away. It is advisable not to weigh the crystals if it can be avoided; a little scoop may easily be made which will measure with sufficient accuracy the number of grains it is constructed for, and the risk of floating particles which the necessary operations in weighing are liable to liberate is guarded against.

Starch Paste.

Besides being the cheapest of all reliable mountants for photograms, starch paste is one of the most effective. It is perhaps less convenient than the now well known "Higgins'" mountant and those of a similar nature, inasmuch as it must be mixed from time to time as required, and there is no practical way of preserving it so as to retain all its properties. Its disadvantage is the trouble of preparing it, but beyond a certain expenditure of time—that involved in the waiting for the water to boil, and that involved in waiting for the made starch paste to cool—the labor and skill required are hardly worth considering as factors against its employment. Any difficulty there may be in making starch only arises when an attempt is made to mix a small quantity, and the failure that generally occurs is that sufficient water to burst the granules—to turn the starch, to use the homely term—makes the resulting paste too thin to secure adhesion between the print and the mount. Success depends more than anything upon the vessel used. Absolutely boiling water is necessary, and as it is necessary that the starch granules should be subjected to water at nearly the boiling point for an appreciable time, a thick vessel which cools the small quantity of water too rapidly means failure; hence to succeed, a thin vessel must be used. To make a teacupful, which is as much as most amateurs require at a time, use a thin china teacup—a cracked or handless one will do—and the paste may be made almost thick enough for the spoon to stand upright without support.

Digitized by Google

THE PORTRAIT AND THE STUDIO

IV.—PIRIE MACDONALD AND HIS IDEAL OF A STUDIO.

In previous issues:—The work of Fredk. Hollyer, B. J. Falk, Harold Baker, C. H. Braithwaite, W. Scott, C. H. Evans, H. M'Michael. To follow:—H. Walter Barnett, Elliot & Fry, Langfier, Ltd., Martin Jacollette, Mrs. Käsebier, and others.

Copyright by The Photogram, Ltd., England.
Copyrighted 1904 by Tennant & Ward, New York.

PIRIE MACDONALD has many proud distinctions. He has probably taken a larger number of the highest honors than any other professional photographer who ever lived. He set (several years ago) a portrait fashion which had probably the largest run of any fashion ever introduced in America, and he has the further distinction that he was the first "PHOTOGRAPHER OF MEN." In his studio to-day "no lady or child need apply," and he points out that this is not because he does not love women, "as every good man should," but because he is more at home with his selected specialty, and believes in the Roycrofters' chosen maxim, "Blessed is he who has found his work, and does it."

Mr. MacDonald's studio is simply an office room on the sixteenth floor of an enormous office building. It has no sky-light, but merely a northerly double window giving a light about 6 ft. square, and some 2 ft. 6 in. from the floor. This is not Mr. MacDonald's ideal. He says: "If I could choose my own studio, it should have one window 7 × 7 ft. facing the north, and its base 7 ft. from the ground. The studio should extend at least 14 ft. beyond the window in one direction and 7 ft. beyond it in the other. Thus it must be at least 28 ft. long, and if the 14 ft. could be made 16 ft. or 20 ft., so much the better. The studio must be at least 21 ft. wide, to enable me to get my sitter to a good distance from my high and concentrated light. I want no blinds or curtains to the window, but must have my little stand with adjustable curtains to place near the sitter. I want no accessories beyond chairs of three or four different heights, and no background except a dark wall and possibly a couple of curtains in different dark tones. I want my window fitted with seven tubes of the Cooper-Hewitt light, which is a marvellously useful power."

It will be seen that Mr. MacDonald's studio is one in which most professional photographers would refuse to work, and that his ideal one is very different from the ideal of most men. He wants a concentrated light, as constant as possible, because he considers that any photographer who has to look after the sitter and draw out of him his real expression, has plenty to do without considering the varied powers of lights and arrangements of curtains. With the same idea of eliminating unnecessary details, Mr. MacDonald always works with the same lens aperture.

Mr. MacDonald's idea of the secret of success is that the photographer must—(1) Have ample time with his sitter. (2) If possible, know his sitter fairly well beforehand. (3) In any case decide what is the sitter's prominent point of character and attitude of mind. (4) Attempt to represent this by a characteristic expression. In addition to all which, he must—(5) Attempt to make his portrait a symphony, by building up such a scheme of tones from the deepest shadow to the highest light as will emphasise the desired expression and subdue all non-essential detail.

Digitized by Google

He says: "I thank God for having increased the astigmatism of my eyes, so that it is easier for me to observe general effects than to see those details which the old-time photographer aimed to bring out as sharply as possible."

In discussing the portrait which is reproduced, Mr. MacDonald said something to the following effect:—

"During all the time I have known you I have considered that the key to your character was 'quiz.' I note that you listen to any story or statement that may be going, and when the speaker has finished, you look up at him to judge from his face whether he has been telling you the truth and the whole truth. To obtain this expression, I had to make several exposures which I knew would not satisfy me. I had to get you interested in my work and in my talk, and forgetful of yourself. Therefore, while studying your face, making three or four different arrangements and making exposures of them, I was all the time working toward what I wanted. I know that with most sitters an expression requires time to grow, and that if it is a natural expression there must be pauses in the growth; therefore during each posing, I talked to you (and this is my method with almost all sitters), but the moment I felt that your interest was flagging or your expression liable to be strained in the least, I made an exposure and changed the plate-holder, which broke the chain of conversation but which left you on the way toward the expression that I wanted. I usually begin with positions and lightings which are not quite satisfactory, and in my experience the proper expression and the best lighting and pose to embody that expression almost invariably come together. They are seldom good enough before the fifth exposure, and very seldom indeed are they later than the seventh. When I have reached the good one I am always quite sure of it, so that I do not need to make more exposures. I have at times made more than seven exposures in one sitting, and obtained a satisfactory result, but these are rare cases. Generally, if I have made seven exposures without being satisfied, I make some excuse for a new sitting. By this method I 'waste' many hundreds of dollars' worth of plates in a year, and I have tried the experiment of making my first two or three exposures on blank holders. Theoretically, it ought to be possible to 'dummy' the exposures during which the expression is growing, and to put in the plate only when pose and expression are satisfactory. I do not know why this scheme will not work, but I have never been able to make it do so."

On receiving the picture which is reproduced, I suggested certain criticisms in the hope of inducing Mr. MacDonald to defend, excuse, or explain his reasons, when he admitted that the picture as it stands is the effect at which he aimed (always allowing for that amount of shortcoming which prevents a man ever being absolutely satisfied with his results). The heavy shadow on the lower left-hand side is introduced to support and give reason for the dark mass of hair on the left side of the face (right of the picture), and that dark mass is necessary to give strength and roundness to the face and to allow of the use of a long scale of tones before coming to the highest light.

A long line of face was secured to emphasise the brow and the power of thought. The line of color, the slight spots on the front, and certain lines on the lower part of the face, were intended to suggest a somewhat pointed and refined chin, which is masked in nature by the beard.

A curious side-light is thrown on human character by Mr. MacDonald's statement that although he photographs for men only, he addresses the whole of his advertisements to women, because he says that no man is photographed to please himself, but only to please the ladies with whom he is connected.

Digitized by Google

Digitized by Google

GOLDEN OPPORTUNITIES.

The experiences of readers, communicated in "Photography for Profit" Competition.

AWARDS.

1st prize (£1 1s.): "Goldstone" (Clarence Ponting, Scarboro'). 2nd prize (10s. 6d.): "Quaker" (W. Foster Brigham, Scarboro'). Honorable mention: "Progress" (W. S. Randles, Liverpool); "Plutôt tard, que jamais" (G. Thos. Hussey, Walthamstow); "Rainbow" (W. T. Garner, Wolverhampton); "Early Bird" (Herbert H. Minnis, Hitchin); "Robin Adair" (C. Campbell, Norwood); "Lennox" (Alec S. Dunn, Edinburgh); "Trout's Tombstone" (H. E. Figgures, Newbury, Berks).

The large and varied response to our suggestion that readers should tell us how they contrive to extract profit from their hobby has been most satisfactory. It reminds us that The Photogram *led the way some year or two ago in first pointing out the press as a source of profit to the photographer. The series of articles then published were followed by the appearance of "Photography for the Press," and by the section on "Copyright" in "The Figures, Facts and Formulæ of Photography," in which an effort is made, with some success we would believe, to forestall the many questions which arise sooner or later in the press-photographer's mind. Judged by the bulk of our competitors' experience, the press and the post-card cult appear to share the honors of providing markets where the photographer may exchange his produce for gold. Some of our professional readers will no doubt complain of the semi- or pseudo-amateur who robs them of custom which they regard as theirs. There is good reason for using every fair means to suppress the pseudo-amateur who quotes below a normal professional price, but, on the other hand, many a professional can learn, from the semi-amateur, to discern the gold in the opportunity.*

Post Cards and Pierrôts.

THE amateur will most probably find a market for his negatives among picture post card publishers. Being at a seaside town, I am able to get a good many popular studies of boats and "heads," which are quickly purchased by large wholesale houses.

A little time ago a long list of firms willing to buy negatives was published in *The Photogram*. I sold some £5 worth, through reading this paragraph, to Tucks and others.

A Pierrôt troupe came to this town for the "season," and scenting a good saleable card, I photographed them (by permission) the first day of arrival. I next prepared, by contact, a sample post card from each negative, and took them round to the largest stationers, to see if I could get "orders." Luckily for me, the Pierrôts would not allow anyone else to photograph them, for after I had done so, it struck them that it might affect the sales of their cabinet groups. I was thus the only one who had pictures of them, with the result that I sold some 2,500 direct prints on "Rotox" cards at 2d. each. These were sold at 3d. each in the shops. On each dozen I cleared 1s. 2d., so that a little calculation will show what a profitable affair it was for me. Being in "digs," I had rather a difficulty in turning out some hundred and twenty cards a night, but by exposing by magnesium wire and drying them on the bed, I was able to manage it.

Pierrots. 2,500 post cards were sold of this subject.

Plate-makers also use one or two of my negatives for show card purposes, the payment being very good—10s. 6d. for loan of negative for six months. I also came across an advertisement of a local firm of post card publishers who wanted negatives. I called and sold some five or six at 10s. 6d. each; in addition to this, they offered me the post of landscape operator for Saturday afternoons (our half-day holiday). All expenses were paid, and 5s. for each accepted negative. Their plan is to send me out to picturesque villages to take photos

Digitized by Google

A photogram for advertisers—
"A millstone hanged about his neck."

for them. I can take eight half-plate views in an afternoon, which brings in £2. Railway fare and meals are also paid, so that it is all profit, and I have also the chance of getting studies for my own use, which usually in the end bring in money prizes in one or other of the trade competitions. GOLDSTONE.

PHOTOGRAPHY FOR ADVERTISERS. "AT HOME" WORK.

The advertising pages of a magazine will show how popular is the photographic advertisement, and in what way the photographer can supply the demand. He may (1) produce attractive pictures bearing on no particular subject, but used by the advertiser to draw attention to his announcement; or (2) he may illustrate a phrase or headline; or (3) introduce the article advertised into his result. For illustrated phrases or studies of pretty women as much as £2 2s. will be paid. I have a standing order of £3 3s. for a "real fine woman," but unfortunately the "real fine woman" objects to being shown all over the world *en déshabille*. Send your ideas to the advertising agents of the magazines. Only in a few cases should the head offices of a manufacturing company be tried, as the business is usually in the agent's hands.

Professionals should attend more to "at home" portraiture. The pets of one's clients bring money to the photographer able to do justice to them. Equestrian studies take up time, but lead to business. It is surprising how very few photographers use the focal-plane shutter for this work. The results look and sell better than the usual wooden things. QUAKER.

A POINT OF VIEW WHICH PROVED GOLDEN.

A year ago a Busch quarter-plate Pockam introduced photography to "Rainbow," who resides in Wolverhampton. Last May "Rainbow" accidentally discovered a position from which a remarkably fine view can be taken of the Wolverhampton Old Church. This view he has copyrighted, and has already sold fifteen 12 × 10 sepia carbon enlargements of it (framed in oak) at a guinea apiece. He is now negotiating for the publication of the view as a picture post card. The ancient pillar on the left of the porch dates back many hundreds of years, and forms part of the coat of arms of the borough. The negative was made on a Warwick "Fast Rainbow" plate through a yellow screen with two seconds' exposure at *f*/32.

Home portraiture of pets.

Wolverhampton Old Church.

£30 IN TWELVE MONTHS.

"Progress" writes:—"My first chance to turn my camera to profit occurred just a year ago, when a firm of local printers to whom I had offered my services invited me to make, as a trial order, photograms of a building they required for a coming publication. This task I evidently carried out to their satisfaction, as they have since placed work in my hands which has not only yielded me handsome profits, but has

Digitized by Google

lately been the means of introducing more offers of work than I care to undertake in my spare time.

"Altogether, my net profits for the past twelve months have reached over thirty pounds (£30)—a most welcome addition to my somewhat scanty income as a city clerk. Not a bad start, Mr. Editor, for one who commenced photography but two years ago with a camera little better than a toy?"

Sold Seventy-two Copies of a Snapshot.

"I don't profess to be anything more than an amateur of very modest pretensions," says "Plutôt tard, que jamais," "but during the floods last June I sold six dozen odd copies of a careless but interesting snapshot of boats obstructing the way of the trams. From a technical point of view the print is not worth much, but it shows a very unusual obstacle to tramway traffic. In like manner, many incidents may be turned to advantage, if one only uses one's judgment."

Floods at Walthamstow. 72 copies of this snapshot were sold.

The Photographer "Looked Sharp."

As "Early Bird" was passing under a railway bridge in course of construction a hoarse voice cried "Take our loikenesses, guvnor." The hoarse voice proceeded from a grimy face, the property of one of a large gang of workmen. On "Early Bird" answering "Yes, if you like," the gang interviewed the foreman, who gave his permission, if the photographer would "look sharp." This "Early Bird" proceeded to do, to such effect that in a few seconds he had exposed four plates on the group of toilers and had negotiated a price of 1s. per print. Not only so: he hurried home, on learning that the gang would be gone in two days, and printed copies on P.O.P. from his four negatives, returning on the third day to collect 1s. from each workman as he left the pay office. He feelingly writes: "As I returned home on my bicycle I could feel in my pocket—each time the pedal rose—a heavy lump of that precious metal so necessary to photography—and photographers!"

Enlarge, Enlarge, Enlarge.

Nine hours spent each day in the City left "Robin Adair" very little time for profitable photography. Daylight work he could not attempt. Enlarging suggested itself. "After some consideration," he writes, "I decided on an Optimus enlarger (5½-in. condenser), and have never regretted the choice. I was very successful, for my first order brought me 15s., of which I reckon 10s. was profit. I have never since been short of work: the most prolific source being cabinets for enlargement to 12 × 10, for which I charge 5s. Out of this I pay 9d. for working up. I gradually increased my stock-in-trade until I am now the proud possessor of a reflex camera (with which I take animals, children, etc., at my customers' own homes), and also a 12 × 10 in. stand camera, as I occasionally get orders for large groups, which is another source of much profit. All this work is generally done on Saturday afternoons, or occasionally before going to the city in the summertime; but, after all, in my experience enlarging is the best form of doing *photography for profit*."

Four Hundred Views of "Shamrock III."

"In March last," writes "Lennox," "I was fortunate enough to obtain a 'stand' in the dockyard (M'Millan & Sons, Ltd.) directly opposite the shed in which the 'Shamrock' was built. Immediately after exposures were completed, I developed my plates, four in number, and on the evening of the same day had a post card of the launch delivered by post in Glasgow.

"The idea of post cards caught on, and I was shortly inundated with orders. As it was my first attempt at 'profit' in regard to my pastime, I agreed to charge 2s. 6d. per dozen for Wellington & Ward S.C.P. post cards; 5 × 4 prints of the same paper sold readily at 3d. and 4d. each, unmounted; glossy, 6d. each. Camera used, half-plate stand; plate,

Digitized by Google

Imperial 'Special Rapid,' backed. Whilst the demand was on I did over three hundred post cards and about one hundred prints. The chemicals used were the ordinary baths for S.C.P., the prices of which are too well known to your readers."

Press Work in Spare Moments.

A reader whose business absorbs fifty-five hours a week started to meet his photographic expenses with the produce of a guinea hand camera. With a half-plate set he now finds press photography pay well. "Keep your weather eye open," he says, "for any startling event in your district—a big fire, a flood, or a railway accident. Get out your picture sharp, and off with it to the most likely journals with a brief account enclosed. One picture—a fish's tombstone and epitaph—has brought me in 35s. so far."

The scoring for the Series prize of £5 5s. now stands as follows:—W. Foster Brigham, 7; Clarence Ponting, 5; Chas. H. Evans, 4; A. Edwards, 2; Gino Bellotti, 2.

The competition for the month is "Architectural Detail"—£1 1s. and 10s. 6d. for the best pictorial rendering of such subjects as fonts, doors, gargoyles, sundials, etc. Last day, May 1st.

The last day for the "Holiday Resort" prints and MSS. is April 1st.

The Fire Competition.—A modification has been made in one of the rules of this competition. In future, the payment of £1 1s. will be made, not for the sole copyright but for the right to use the photogram for advertisement purposes; rights of reproduction in the press, etc., remaining with the photographer. Some illustrated notes on photographing the scenes of fires will appear shortly.

The Old Fish's Epitaph.

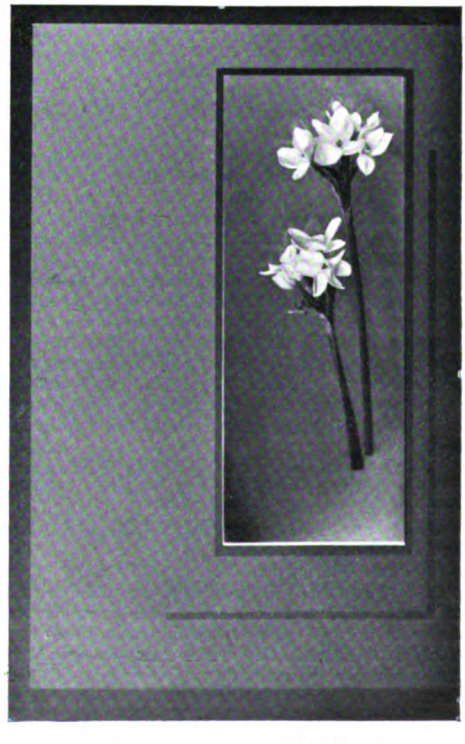
A quaint subject which has earned £1 15s. in reproduction fees.

PICTURE POST CARDS.

The fee for reproduction on post cards, says *Copyright Notes*, should be not less than 10s. 6d. royalty per thousand for half-tone or collotype, or £1 1s. per thousand for bromide or ordinary photographic processes.

A bureau for miscellaneous post cards is being sold by The Photochrome Co. It is made on the "card filing" system already used by the company for other bureaux. The price is 1s. 6d., and one can get dividing-cards for almost every imaginable subject.

In reference to the recent postal concession as to book packets, it is well to bear in mind that though a card as large as 2 ft. × 1 ft. may pass as a book packet for a halfpenny, large cards run a very considerable risk of damage in transmission.



A BORDER POST CARD. By A. Edwards.

Digitized by Google

What's What

An Error occurred last month in the formulæ on page 87. Under "Carbon Printing" the formula for clearing carbons from opal should be "nitric acid" (1 in 20) not "ammonia."

The M.Q. Developer for Velox, says W. Wolkmann in the *Rundschau*, is best when freshly made, but if the hydroquinone be omitted and added solid or in sulphite solution, at time of use, the action of the developer is equal to that of one entirely compounded on the day of using.

To restrain Para-amido-phenol developer. M. G. Balagny finds nothing better than an acid sulphite, the addition of which he regards as an admirable means of treating over-exposures. He uses a mixture of soda sulphite solution and commercial "bisulphite solution" for this purpose, but those who work out the method in conjunction with rodinal, unal, or other para-amido-phenol developers should use potass metabisulphite or utilise the acid properties of acetone sulphite. Development will be much slower, but M. Balagny speaks of the formula as of remarkable assistance in cases of over-exposure.

Notes on Chemicals.—*Sodium acetate*, $NaC_2H_3O_2 \cdot 3H_2O$ (Germ., Natriumacetat; essigsaures Natron; Fr., acetate de soude: terre foliée minérale), is sold in two forms, "cryst." and "fused." The "cryst." has the above formula, and dissolves in water to the extent of 3 oz.—60 gr. per 10 oz. One part dissolves in fifty parts 90 per cent. alcohol. The crystals melt at 140° F., boil at 260° F., losing their water of crystallisation and becoming solid. At a much higher temperature (540° F.) this anhydrous salt melts, solidifying to a mass of crystalline plates. In this process tarry matter, formates, etc., present in the acetate are destroyed, and for this reason the "fused" acetate is better than the "cryst." for toning baths, these organic impurities in the latter exerting a reducing action on the gold. Fused acetate is usually slightly alkaline from formation of sodium carbonate.

Sodium bichromate, $Na_2Cr_2O_7 \cdot 2H_2O$ (Germ., Natriumbichromat or doppeltchromsaures Natron; Fr., bichromate de soude), dissolves very readily in about its own weight of water, and hence is sometimes used in place of potass bichromate.

Borax (Sodium borate), $Na_2B_4O_7 \cdot 10H_2O$ (Germ., Natriumborat; Fr., borate de soude; soude boratée). Purchased in crystals or powder. Soluble in cold water to the extent of 350 gr. per 10 oz. Much more soluble in hot water, which should be used when making a solution. Dissolves also in glycerine. The solution is slightly alkaline. It increases the solubility of tannic and gallic acids and many tinctorial bodies, casein and resins. A solution of the latter is used as a varnish for negatives, prints, collotypes, etc.

Borax is a mild antiseptic, a few grains per ounce improving the keeping properties of starch or dextrine paste. Gold chloride *plus* borax is one of the best toning baths (60 gr. borax to a grain of gold). If mixed in hot water the bath is ready when cold, otherwise five or six hours must elapse.

A negative soaked in 3 per cent. borax solution and dried without washing is said to be readily retouched.

Sodium chloride, NaCl (Germ., Chlornatrium Kochsalz; Fr., chlorure de sodium, sel marine, sel gemme). Ordinary table salt is pure enough for photographic purposes. It becomes moist from the presence of magnesium chloride. Ten oz. of cold water dissolve 3½ oz.; hot water very little more. The solution dissolves silver chloride, and is thus a weak fixing agent. Like other chlorides, it acts as a restrainer in the alkaline development of chloride plates. Salt solution dissolves exposed bichromated gelatine more freely than pure water, and hence is used for over-exposed carbon prints. A 10 per cent. solution of salt made acid with sulphuric acid removes yellow pyro stain from negatives.

Sodium fluoride, NaF (Germ., Fluornatrium; Fr., fluorure de soude). Sparingly soluble in water—175 gr. per 10 oz. Acidified with sulphuric acid it is used as a substitute for hydrofluoric acid in the stripping of negatives. Glass to be matted is first etched clear in hydrofluoric acid solution and then treated for two or three hours with sodium fluoride solution.

Sodium phosphate, $Na_2HPO_4 \cdot 12H_2O$, (Germ., Phosphorsaures Natron; Fr., phosphate de soude). Transparent crystals, which as purchased are often opaque from loss of water of crystallisation. Ten oz. of water dissolve 1½ oz. of the salt. The solution deposits a slight green mould in course of time. It is neutral to phenolphthalein; alkaline to litmus (difference from tribasic phosphate). Used in gold toning baths and in the oxalate developer for platinum prints. According to Hübl, sodium phosphate in the developer of sepia platinum paper favors the sepia tone.

Tribasic phosphate, $Na_3PO_4 \cdot 12H_2O$. Alkaline to phenolphthalein, turning it purple. Used by Lumière in place of sodium carbonate in developers—133 gms. in place of 100 gms. of cryst. carbonate.

Digitized by Google

Sodium tungstate, $Na_{10}W_{12}O_{41}\cdot 28H_2O$ (Germ., Natriumwolfranat; Fr., tungstate de soude). Sparingly soluble in water, forming an alkaline solution. Used with gold chloride as a P.O.P. toning bath for brown tones. Gum *plus* sodium tungstate and ammonium sulphocyanide becomes insoluble on exposure to light.

GEORGE E. BROWN.

"Candlelight" Photography.—Those interested in the candlelight effects of Mr. Newton Gibson in *The Photogram* last month may be glad to note one or two hints on getting similar results. To begin with, one must understand that the candle has nothing to do with supplying the light actually impressing the plate. The actual light must be one a good deal stronger than candlelight—magnesium ribbon or powder. This light we must place as near as possible to the candle, but *out of the angle of the lens*.

To make a trial, arrange the table to hold the candle and other suitable objects under a convenient gas bracket. When the things you want in the picture are arranged to your liking, turn out the gas and light the candle, then take note of how the shadows are thrown by the candle. Then bring the gas bracket over the candle and watch if any difference is being made in the shadows. The light being a little higher, they may shorten a little. If you want them longer, bring the gas lower. When you have got the shadows thrown by the gas as nearly as you can the same as those cast by the candle used, you have then to make the exposure by burning the magnesium ribbon in the gas-flame, or using a flashlamp at this spot.

The chief secret in the work is in protecting the lens from stray light. A good plan is to have a shade over the gas or a thin tin basin without a bottom, painted white inside and black outside; this throws all the light down. Another way is to burn some ribbon attached to the inside of an ordinary metal dish cover. This can be held in the hand, and moved about a little on its own axis, throwing a light like a bull's eye; or a flash-candle, secured inside the dishcover and the cover suspended by a string from the roof, will do as well. The idea of the cover is that light comes only from the bottom, and being near to the candle, has the same effect. No direct light must enter the lens except the candle-flame, and to make sure of this it is a good plan to hang a curtain in front of the camera, so that the bottom edge comes level with the top of the plate.—J. PEAT MILLAR.

Where this Sign is seen.—The Directory of Dark Rooms throughout the world where *The Photogram* dark room sign is displayed will this year be issued with the June number of *The Photogram*. The list has been considerably augmented since its last appearance, and will, no doubt, again be the most complete register of dark rooms available to tourists. As the large majority of the dark rooms are owned by dealers in photographic materials, the list is incidentally a directory also of photographic retailers. And as a copy goes to every one of them, the June issue of *The Photogram* is a valuable means of establishing or cementing connections in a business way.

Additions or corrections which are desired should reach the Editors, Effingham House, Arundel Street, Strand, W.C., not later than May 6th.

A Dictionary of Photographic Chemistry is being issued by Gautier Villars in eight parts at twelve francs. The compilation is by G. & Ad. Braun fils, and under the alphabetical headings considers the properties of the chemicals and their application with about equal fulness. We are glad to see that methods of manufacture and such like matters of no practical use to the photographer are dismissed in a word or two. The dictionary promises well.

A French Manual of the Hand Camera.—Under the title *Reporter Photographique* appears as excellent a treatise for French users of the hand camera as we have seen (Paris: Chas. Mendel, 118 Rue d'Assas). The author, Albert Reyner, keeps close to working conditions. For example, he says much on the height at which to hold the hand camera, how a low point of view improves an empty foreground, and how it is the secret of impressive pictures, of jumping horses, vaulting men, or divers in their flight. In photographing processions, the dust raised by the vanguard is indicted as a frequent cause of veil in the negative, often attributed to other things. The best way to avoid it is to take a standpoint where the wind will blow the dust *away* from the camera, not

Digitized by Google

towards it. Too tight a grasp of the camera, says M. Reyner, leads to unsharpness from longitudinal vibration of the contracted muscles. The volume touches the many practical problems of this kind, and may be studied with as much profit by English readers as by French, since it contains very little which applies specially to Continental apparatus.

The Copyright Union now issues an occasional paper, *Copyright Notes*, to its members. Perusal of the first number should convince the outsider of the great service the Union can be to him. We advise our readers who deal in rights of reproduction to learn more of its activities from the Secretary at 23 Soho Square, London, W.

Acetylene Gas—How to Make and Use it (London: Percival Marshall & Co.; 6d. nett).—Photographers using or proposing to use acetylene will be glad to learn from this little manual why one kind of generator is better than another, even if they have no need of the author's directions for the home manufacture of the apparatus.

The National Photographic Record Association records another successful year, with new, active local associations for Surrey, Leicestershire, East of Scotland, North Middlesex, and the Outer Hebrides, as well as good results from the older associations. 3,142 permanent prints have been placed in The British Museum, and the Association will be represented at the St. Louis Exposition by its president, Sir J. Benjamin Stone, M.P., and by some three hundred of his large views of local ceremonies and customs, exhibited in a room set aside for the purpose. The indefatigable honorary secretary, George Scamell, 21 Avenue Road, Highgate, London, N., will be pleased to hear from those willing to contribute permanent prints for the national collection; and will give information and assistance to those wishing to start local surveys.

The Professional Photographers' Association reported splendid progress at its annual dinner on March 11th, although the president, Alfred Ellis, urged that the six hundred members ought to be increased to a much larger number, especially since it might soon be necessary to influence Parliament on certain points important to photographers. Mr. Ellis said that the principal works for this year were to be a professional exhibition at the Derby Convention, and the important scheme of examination and certificates for assistants. He hoped there might soon be a permanent office and official, to supply advice and information to members. The hon. sec.-treasurer, W. Grove, reported sound finances, ninety new members in the past eight months, and 20 per cent. reduction on members' fire insurance policies. Souvenir gold medals were presented to the past presidents (Thos. Bedding, W. Grove, and Alfred Ellis) by R. Lang Sims on behalf of the council.

Books, etc., Received.—*Das Arbeiten mit Rollfilms* (Halle: W. Knapp; M 1.50). A useful brochure on rollable-film photography, chiefly in reference to cameras and the development of the film.—"Winter Photography," No. 57 of *The Photo-Miniature* (Dawbarn & Ward, Ltd.; 6d. nett).—*Work Indoors and Out for the Camera.* By Osborne I. Yellott.

FORTHCOMING EXHIBITIONS AND COMPETITIONS.

Particulars of Exhibitions are given when first announced, and again when it is time for entries to close. Will secretaries who wish insertion please mention details below, and note that last day is 12th of each month for publication on 25th? The Editors will feel grateful for the Exhibition catalogue as soon as published.

En.=Entries. Pic.=Pictures. Ex.=Exhibition. G.=Gold Medals. S.=Silver Medals. B.=Bronze Medals. O.C.=Open Classes. Sec.=Secretary.

NOTICE TO EXHIBITORS.

On the suggestion of several readers, the Editors have arranged to send entry forms for the exhibitions or competitions announced month by month on receipt of TWO PENNY STAMPS. *Their omission to enclose any form or forms should be taken as an indication that at the time of despatch the printed matter was not published. It is hoped that exhibiting readers may find it convenient to obtain the entry forms of all current shows by a single application in this way.*

---

(1) *The French Salon* (Photo-club de Paris).—En., March 15. Pic., April 10. Ex., May 3 to June 5. Sec., Paul Bourgeois, 44 Rue des Mathurins, Paris.

(2) *Devonport C.C.*—En., May 12. Pic., May 20. Ex., May 24 to 28. 4 O.C. S. and B. Sec., A. J. Catford, 78 Charlotte Street, Devonport.

(3) *West Hartlepool A.P.S.*—Ex., April 13 and 14. Sec., E. F. Jones, 55 Lansdowne Road, West Hartlepool.

(4) *Chiswick C.C.*—En., April 11. Pic., April 20. Ex., April 23. 3 O.C. S. and B. Herbert Gentry, 39 Fairfax Road, Chiswick.

(5) *Barnet £500 Competition* for work on Barnet plates, films, and papers. 19 Classes. Last day, Dec. 31. Circular from Elliott & Sons, Ltd., Barnet, Herts, England.

(6) *Plymouth P.S.*—Ex, May 11 to 18. Sec., Wilfred Grist, 105 Old Town Street, Plymouth.

Digitized by Google

Trade

Manufacturers sending apparatus for examination and notice should state distinctly whether, and when, they wish it returned.

Catalogues, Price Lists, and Descriptive Pamphlets.—*Edmeads & Co.*, Burchell Road, Peckham, S.E.—Enlarging, printing, etc. A specialty is made of sepia bromide enlargements.

A. H. Baird, 33-39 Lothian Street, Edinburgh.—Chemicals, including dyes.

The Altrincham Rubber Co., Altrincham.—A list with some quite novel apparatus described, including a 20s. focal plane shutter, a silent studio shutter, and a "machine" for printing bromides.

"*Titian*" *Medium Mfg. Co.*, 32 Surrey Street, Sheffield.—Bromide enlargements, retail and for the trade. The firm has some new specialties in the way of spotting medium, negative varnishes, etc.

Andrew J. Lloyd, 322 and 323 Washington Street, Boston.—An immense list of 416 pages. Lloyds does for the American photographer what Houghton or Fallowfield accomplish here: that is to say, brings into one volume descriptions and prices of every piece of reputable apparatus and material on the market.

Jonathan Fallowfield, 146 Charing Cross Road, W.C.—This latest issue of *Fallowfield's Annual* claims to be the largest guide or catalogue ever issued in the photographic trade. And we cannot refute the claim, for 1040 pages and 1860 illustrations make up a marvellous encyclopædia of photograhpic requisites. To turn over its pages is to submit to a succession of temptations jeopardising one's balance at the bank. Nevertheless, we expect our readers will wish to send the 1s. 6d. charged for the *Annual*, and they will receive it as soon as Mr. Fallowfield has despatched the 4000 now on order.

"Wesner" Plates.—In future, all Messrs. Westendorp & Wehner's plates will be sold as "Wesner."

A New Orthochromatic Plate of Schleussner's (Thos. Christy & Co., 4, 10 and 12 Old Swan Lane, Upper Thames Street, E.C.), reaches us as we go to press, and will be noticed next month.

The Antinous Release of Messrs. W. Watson & Sons can now be supplied in a form suitable for use on the Goerz Sector Shutter. The price remains the same as for the other patterns, viz., 2s. 6d.

Technical Photography of all kinds, from photographing a bicycle or a baby to retouching an aristocratic nose, is undertaken by Arthur Whiting, long known in photographic circles as a skilled worker. Mr. Whiting's address is now 24 King's Parade, Mitcham Road, Tooting, S.W.

New Papier-mâché Dishes are now being issued by Messrs. John J. Griffin & Sons, Ltd., at such moderate prices as 3s. 9d., 4s. 6d. and 5s. per dozen in quarter-plate size. Of these the Iltz pattern deserves special mention for the readiness with which the plate can be lifted out of the solution.

A list of dealers who stock their goods is being compiled by Messrs. B. J. Edwards & Co. for the comfort and guidance of photographers. The list will be largely circulated, and dealers who wish to take advantage of the publicity thus offered them should address Messrs. Edwards without delay.

For Developing Films Messrs. Butcher, of Camera House, St. Bride's Street, now supply the "Carbine" dish in which the band of exposures is drawn to and fro under a pair of bars. The dish is of porcelain, and being smooth, does not damage the delicate gelatine surface. It takes film up to 3½ in. wide, and costs 2s. 6d.

Chrysosulphite is a new preparation of the Lumière N.A. Co.'s which, used with pyro, metol, etc., in place of sodium sulphite, converts the solution into a "daylight developer." All the operations subsequent to the actual insertion of the plate into the developer can be done in daylight or ordinary artificial light. The Lumière N.A. Co., of 4 Bloomsbury Street, London, W.C., will send particulars.

The "Felixi" Plate of Mawson & Swan, which completes the trio of new emulsions lately emanating from this firm, is an extra rapid plate, not of the great speed of the "Celeritas" plate, but not greatly less sensitive. The Felixi is a satisfactory plate in use, developing to abundant density. Its rapidity is more than sufficient for the greater proportion of hand-camera use, and for this work as well as for portraiture and general outdoor photography, it should meet with a favorable reception.

The Barnet Orthochromatic Plate is a notable introduction of Messrs. Elliott & Sons, Ltd., for two reasons:—(1) It is a rapid iso plate—as rapid as any on the market, and (2) it is sold at the popular price of 1s. per dozen quarter-plates. Hence we may predict a large demand for the new plate at the dealers, where it may be recognised by its highly decorative label—a white design on a blue-grey ground—on which Messrs. Elliott are to be congratulated. Spectrum and camera tests show the plate to be highly sensitive in the yellow and green.

Rotograph Midget Post Cards.—The sensitive papers Rotox and Rotograph—in their matt and glossy varieties—are now on the market of the size requisite for printing the new shape of post card issued for a penny by the Rotary Photographic Co. as "Midgets." The card appeals to both professional and amateur, for the reasons that a full sized picture can be printed from the quarter-plate negative, and that there are no restrictions with regard to correspondence for inland postage on the address side, as with the panel book-post cards. The Midget papers cost 6d. per packet of 12, 3s. 6d. per packet of 100, or 30s. per 1,000.

The Rotox Competition.—The awards in the Rotary Photographic Co.'s competition have now been made by the judges, Messrs. Thomas Bedding, A. Horsley Hinton, and H. Snowden Ward, who themselves went through the whole of the 3,000 and more prints submitted. The list of prize-winners includes a large number of names, and the competition should give as much satisfaction to the fortunate recipients of the cheques as to the promoters. Even those who have failed to win a prize have no reason to regret their effort if it has led them to adopt the Rotary Co.'s printing paper, Rotox. The full list of the winners appears in the current (March) issue of *The Bromide Monthly*.

An Important Amalgamation. — Messrs. George Houghton & Son, Ltd., have incorporated their business with those of Messrs. Joseph Levi & Co., Spratt Bros., Holmes Bros., and Mr. A. C. Jackson. The title of the new company is "Houghtons, Ltd." Mr. George Houghton is its chairman, and Mr. M. L. Isaacs (J. Levi & Co.) the vice-chairman. The amalgamation, representing as it does the largest manufacturers of apparatus and distributors of photographic goods in this country, is assured of a very strong position in the photographic trade. The management of the several businesses remains in the hands of those hitherto connected with them.

For Ladies.—Actuated by the most gallant motives, the Altrincham Rubber Co. are to rob photography of the reproach of "messiness," or at any rate to safeguard feminine apparel from the stains and splashes which the most minute care cannot invariably prevent. Even degenerate man may not be averse to take advantage of the company's protective measures, first of which is a rubber developing apron, price 3s. 9d. Its size and girth fit persons of normal development, and the most ardent "gum-splodger" protected by it might "splodge" (whatever that is) with impunity to his heart's content. A pair of rubber sleeves (1s. 6d.) supplements the apron, and should serve the laudable purpose of preserving all unspotted the masculine shirt cuff or the feminine confection of crêpe de Chine.

Japan in the Strand.—The Kodak Co.'s Strand Gallery, near Charing Cross Station, now holds one of the sights of London in the shape of some 130 prints or enlargements from negatives of Japanese scenes or incidents. The major part of a very interesting collection comes from the Kodaks of Mrs. Lazenby Liberty, Miss Davidson, G. Ralph Cox, F. F. Paget and Adam Sykes. Many of the exhibits are from the tiny negatives of the early Kodaks, so that the show, which is free to the public, is a photographic lesson as well as a pleasant way of studying the Far East in pictures.

The Kodak Co. inform us that they will be glad to arrange for special parties and societies to visit the Gallery, even after the hour at which it usually closes. These courtesies are extended free of all charge. Applications should be addressed to the Manager, 40 Strand.

The Planastigmat of O. Sichel & Co., 52 Bunhill Row, E.C., has given us results which confirm the claims made for it. The particular lens tested was the No. 1A of 5¼ in. focal length and listed to cover a 5×4 plate at *f*/6·8. 5¼ in. is a short focus for a 5×4 plate: it is more suited for quarter-plate, and if the lens be chosen on this basis its properties, as we have found them, are still more favorable.

Digitized by Google

The field is extremely flat, coming more nearly to theoretical perfection than many a more expensive lens. At the full aperture of *f*/6·8 the 5×4 plate is covered to its corners, at *f*/11 a half-plate, and at *f*/16 a 7½×5. The corrections of spherical aberration and astigmatism are good. The single components are almost exactly of the same focal length, which is not quite double that of the complete lens. We found them to be 9 in., but the nodes, as in almost every anastigmat single combination, lie a long way behind the lens. In these they are 1½ in. from the back surface, so that a camera extension of 10½ in. is required when focussing on distant objects, and, of course, a greater extension than this as nearer objects are focussed. Each single lens at its real working aperture (about double that engraved on the mount) covers plates in about the same way as the complete lens, and the images are practically without distortion. The lens cells are of magnalium or aluminium, but the body is of brass, the whole instrument being thus fairly light in weight. These facts and figures are sufficient to show any one who thinks them over that the "Planastigmat" is an excellent lens for all-round work. Its full aperture fits it for rapid exposures and its great covering power for architecture or copying, or for use on those numerous occasions when the rising front of the camera has to be used. The price of the 5½-in. lens is £3 8s.

Mounting Revolutionised.—A new method of mounting photographic and other prints is now being introduced into this country after having become enviably reputable on the Continent. Its introducers here are the Adhesive Dry Mounting Co., Ltd., 27-28 Fetter Lane, London, E.C.

Let us briefly describe the process as we have several times seen it demonstrated, and let us attempt to represent the rapidity with which it is carried out by compressing our description into the fewest words.

The Process.—A piece of resinous tissue ("Adhesive") is laid on the back of the print, and fixed by the touch of a warm iron.

Print and tissue are trimmed together, and laid print uppermost on the mount.

The whole is squeezed in a hot press for a second or two, and the print is fixed firmly, smoothly, and where placed, to its mount.

Apart from the rapidity and certainty of the process, there are certain important advantages about it which do not suggest themselves at the first thought.

The print is mounted dry. Hence the avoidance of distortion caused by mounting wet a print which by that very fact is not of the same dimensions as when dry. It is well known that the expansion of a print on wetting is not the same in each direction, nor of course can the distorted print contract to its original dimensions, as it would do were it unmounted. Dry mounting removes a cause of vexation to many a photographer turning out work to a carefully adjusted scale.

The resinous tissue insulates print from mount. Whence it is claimed that the print is protected from impurities in mounts capable of injuring it under ordinary circumstances, so that mounts of cheaper materials can safely be used at a much lower cost.

The thinnest mount can be employed without the print wrinkling, for there is no contraction of the wetted print to drag up the mounting paper.

In addition to these advantages, the process can be applied to the modern border mounting of prints (see Mr. Evans' articles month by month), with any kind of print. At present successful border mounting involves a platinum or other print free from a gelatine coating, for only a print of this kind will lie perfectly flat. But with the perfect evenness of the new method of mounting, any kind of print and any number of prints can be built into one single piece, which can be handled like a bit of board. Also, the machine which fixes the print will impress a plate-mark on the mount, and there are other minor advantages. The prospectus of the company should interest photographers of all classes—first of all the professional, perhaps, but also the dealer, who will wish to mount by this method for his customers, and the amateur who desires the highest perfection at this last stage of his work.

Correspondence

Newton Gibson's Candlelight Photography.

DEAR SIRS AND MADAM,—Whenever I take up *The Photogram* there is sure to be something of special interest. In the current number it is the account of the work of Newton Gibson, and as the secret of his success is promised to readers, I intend, when business permits, to put into practice a theory of mine as to his method. And if I am able to carry out my experiments before the publication of details, I will communicate results to you. There are several slight peculiarities common to all the examples you publish which fit in with my ideas. I enclose a sealed envelope containing an outline of my intended experiments, which please do not open until after publication of Mr. Gibson's secret, in the event of my being unable to complete investigation before.—Yours very truly,

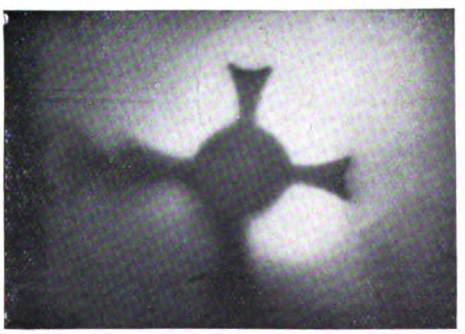
SIDNEY C. YOUNG.

85 Finsbury Pavement, London, E.C.,
March 2, 1904.

[We have placed Mr. Young's letter among our archives. —EDS.]

A Radiogram.

DEAR SIRS AND MADAM,—The enclosed print may be of interest to your readers. It was obtained by the exposure for six days of a photographic plate to the action of a piece of pitchblende (2¾ oz.) which I obtained in Cornwall twenty-four years ago. The plate was wrapped in paper (metal



cross on top) and the pitchblende (wrapped in black paper) on top of cross, the whole put in a box and kept in the dark. It appears to be rather a good specimen of a "radiograph," which must be my excuse for sending it on to you. —H. T. M.

PRINCIPAL CONTENTS.

Mounting the Exhibition Print. By Fredk. H. Evans.
Enlargements *vid* Reduction. By Clarence Ponting.
The Photo-Secession.
Six-Plate Promenades.—Round Stratford-on-Avon. By Catherine Weed Ward.
The Scottish Salon.
From my Note-Book. By Alexander Mackie.
The Portrait and the Studio.—IV. Pirie MacDonald and his Ideal of a Studio.
Golden Opportunities.
What's What.
Forthcoming Exhibitions and Competitions.
Trade. Correspondence.

The Process Photogram

contains the whole of *The Photogram plus* the following articles and notes relating to photo-mechanical processes :—

Practice and Theory of Half-tone Etching. By E. Klimsch.
Modified Collotype for Beginners. By H. G. M. Barstow.
A New Collodion Emulsion. By Baron von Hübl.
A Screen for Dry Plate Half-tones. By Wm. G. Breuker.
Alleged Improvements in Photography on Aluminium.
Current Topics. Correspondence.

Digitized by Google

THE
JOHN CRERAR
LIBRARY

Digitized by Google

THE HAND OF MAN.
By Alfred Stieglitz.

Digitized by Google

THE PHOTOGRAM

VOL. XI. MAY, 1904. No. 125.

ADVANCED HAND-CAMERA WORK.

by Walter Kilbey.

The first of a series of articles on the more difficult applications of the hand camera. Mr. Kilbey will relate his methods of handling such subjects as athletics, divers, sports, and games. Naturally he will have much to say on the focal-plane shutter, his long experience of which well qualifies him to act as instructor.

FIG. 1.—$\frac{1}{1000}$th sec. at *f*/6, Thornton-Pickard focal-plane shutter. An example of how enlargement will give a striking result when the subject cannot be closely approached—the picture occupies only $1\frac{1}{2} \times \frac{3}{4}$ inches in the original quarter-plate negative.

IN a little handbook of mine* a description of the various types of hand cameras is given, and therefore in these articles I need only indicate very briefly the salient features of a camera mainly intended for the photography of the various special subjects which will hereafter be considered.

Landscape Work and Figure Studies.—For work of this kind almost any of the various types on the market are suitable, provided they are fitted with a shutter working at say from $\frac{1}{10}$ sec. to $\frac{1}{100}$ sec. or thereabouts. If the figure studies include those of young children, however (see fig. 4) it will be imperative that the shutter works at a much higher speed: even $\frac{1}{500}$ sec. would not be too rapid for some children of the mercurial type, or for those at play—a time when the most striking and lifelike results are obtainable. For purely landscape work, too, a long range of focussing adjustment is a desideratum, as it permits the use of lenses of different focal lengths, single combinations, and, possibly, a low-power telephoto attachment, though the opportunities of using the latter will necessarily be rare unless the camera is, for the nonce, affixed to a tripod. Of course an additional focussing scale will be required for each lens. For some classes of portraiture, too, the long extension will be of much utility,

* *Hand-Camera Photography* (Dawbarn & Ward, Ltd.).

Digitized by Google

enabling the user to get close up to the subject, and secure it upon a larger scale than would be otherwise possible.

Architectural subjects will require the addition to the camera of a rising and falling front and a swing back or swing front.

Street Scenes.—The chief points to which the reader's attention should be directed in a camera mainly intended for this class of work, is that it should be as unobtrusive as possible, and that the various adjustments should be made from the outside, and in a rapid and positive manner if the best work is to be done.

FIG. 2.—$\frac{1}{10}$th sec., *f*/16, at 7 a.m., with Thornton-Pickard focal-plane shutter. Illustrating how the high efficiency of the focal-plane shutter allows of the lens being stopped down, when, as in this instance, both foreground and middle distance are required in focus.

Athletic sports, diving, etc., of the type shown in the illustration accompanying this article, and other subjects in which there is rapidity of movement, will almost require a particular class of apparatus, though not necessarily of such a form as to be useless for other work. The first essential is a shutter working at high speeds, say up to $\frac{1}{1000}$ sec.; this can only be obtained in the form which has of late become so very popular, the focal-plane shutter, of which I shall have much to say.

There is no reason why the reader who has an efficient camera with a good lens fitted to it should not have such a shutter adapted to his existing apparatus, providing there is room for its insertion. This would hardly be possible in the case of an instrument of the magazine type, and in any event some means would have to be adopted for keeping open the shutter attached to the lens whilst the focal-plane shutter is being used. The cost of the shutter only would be from about 30s. for the quarter-plate size, the charge for fitting varying, of course, with the amount of alteration required.

At the present time there are several varieties of focal-plane shutter upon the market, but they will all be found to come under one of two classes: those in which (1) the adjustment of the shutter is made from the outside and can be carried out even when the plate is in position, and in some cases even after the shutter has been set; (2) in which the alteration can only be made by manipulating the slit itself, which of course cannot be done when the plate-holder or other receptacle for the sensitive material is in place. Both systems have their advantages and their disadvantages. The selection must be left to the reader, who will endeavor to ascertain by inspection which is most likely to meet his needs. At the same time it may not be useless to indicate some of the points which should be taken into consideration when the choice is being made. In the case of the shutter in which the alterations can be made from the outside, its advantages are that a great range of different exposures can easily be obtained; in fact, the time the plate is to remain uncovered can be decided upon and arranged for a few seconds before the exposure is made, for, as already

Digitized by Google

FIG. 3.—$\frac{1}{1000}$ sec., at *f*/6, with Goerz-Anschütz focal-plane shutter. The horse has all four hoofs off the ground, a point of interest from the equestrian as well as from the photographic point of view.

stated, all this can be done after the camera has been made ready. Against this, however, must be placed the fact that such an instrument is very complicated—a most undesirable feature in any piece of photographic apparatus. Naturally it is more likely to break down, and for the smallest adjustment must be returned to the maker. Moreover, dust, that bugbear of photographers, is not unlikely to find its way into the working parts and play havoc with their reliability.

On the other hand, the simpler shutter is not so likely to get out of order, and should it do so, the part most likely to be affected is the cord or chain which keeps the two halves of the blind together. Should this break, it would be quite an easy matter for the photographer to repair it himself in a few seconds, even on the field of action. Of course it is a drawback that the slit cannot be adjusted, and that a great range of exposures cannot be controlled after the shutter has been set, and the plate put into position. This disadvantage, however, is, in my opinion, more imaginary than real, for with one width of slit only, a fair variation of speed can be effected. Thus, with the slit at its narrowest, exposures ranging from $\frac{1}{2000}$ sec. to $\frac{1}{1000}$ sec., and with the slit at its widest, from $\frac{1}{200}$ sec. to $\frac{1}{100}$ sec., can be secured, merely by altering the tension of the spring. It will not be often that a larger variation than this will be required, and when it does, it is but the work of a few seconds to make the slit narrower or wider as may be required. It would seem, therefore, that the balance of the advantages is not altogether on the side of the more complicated shutter.

FIG. 4.—$\frac{1}{700}$th sec., at *f*/6, Thornton-Pickard focal-plane shutter. The rope is not critically sharp: $\frac{1}{800}$th of a second is usually required.

An article of this description would hardly be complete without brief reference being made to lenses. The ordinary rapid rectilinear will be found of very little use for rapid focal-plane shutter work, owing to the largest aperture rarely ex-

Digitized by Google

ceeding $f/8$. As a lens working at $f/6$ passes approximately twice the amount of light transmitted by a lens working at $f/8$, the writer would recommend the purchase of one of the modern anastigmats working at $f/6$ or $f.4$. The depth of definition will generally be found to be remarkable, and sufficient for those subjects in which very rapid exposures are necessary. If the focussing be carefully done, the lack of distinctness in the background is an advantage rather than otherwise, as tending to throw the principal objects into greater relief.

FIG. 5.—$\frac{1}{5}$th sec., $f/8$, Thornton-Pickard focal-plane shutter. The focal-plane shutter not only produces results which no other shutter can rival, but is always available for slower speed and, for a given rapidity, exposes more fully than other shutters.

In photographing athletic sports, unless you know the ground on which they are to be run off quite well, and can be there as soon as the gate is opened, thereby getting a choice of lighting close to the barrier, you might almost as well stay at home so far as your photographic results are concerned. What you really do want is permission to go into the enclosure where you can work close up to the competitors. To assist you in obtaining this valuable passport, there is nothing like a polite note to the honorary secretary of the sports promoting club. He is usually a very busy man, who appreciates brevity, but if you have indulged in practical athletics, do not forget to mention the fact, as there is not only a fraternal feeling between athletes and ex-athletes, but your past experiences on the path will have taught you to keep out of places in which you are not welcome. The honorary secretary knows this, hence he will more readily grant a permit to one who knows the ropes, than to one who has never worn a spiked shoe or been on an enclosure in his life. In fact, the wider your experience on the path, the more welcome will you be. Of course, if the sports secretary is within reach, try and see him personally and explain your wishes. Once you have obtained a few good results, you will find that the production of them from your pocket-book will be the "Open Sesame" to the meeting you wish to attend, for the secretary and his committee are only human, and if there is a probability of their club-fellows' feats or defeats achieving photographic fame, the chances are your permit will be made out immediately. You should always, I think, offer a few prints of the results.

In your letter or interview, do not fail to mention that yours is only a hand camera. The best stand is your own two legs; a tripod is inevitably in the way, and at a big meeting would not be tolerated at all. It has a happy knack of getting into everybody's way, and spectators will audibly resent their view being impeded. Master your hand camera and trust in it and your own ability with implicit confidence, and never be tempted to use a tripod at a sports festival. Sometimes you will find that the professional photographer has purchased the sole right to photograph at the particular meeting you are desirous of attending. In this event you will have to interview him and see if you can come to terms. If you show him some specimens of your work, and tell him you only intend using a hand camera, and offer him the use of any of your negatives, he will probably give you the desired permission, as he stands to lose nothing, but on the contrary to gain considerably by the arrangement.

(To be continued.)

Digitized by Google

MOUNTING THE EXHIBITION PRINT

BY FREDK H. EVANS.

This month's exercise.—Print:—"The House on the Wall," by Chas. H. L. Emmanuel. Mounting Papers (Lindenmeyr's) as follows:—"Stone" (this month's covers); "Granite" (to be used as the covers for June); "Genova" (to appear as the July covers). Students of this subject should turn to the advertisement pages for information as to where to procure supplies of the mounting papers.

THIS month's exercise is provided by a very delicate and delightful little print exhibited at the last *Photographic Salon*.

There Mr. Emmanuel's mount was of a greyish-blue mottled paper with a rough surface, laid down on a stiff card; the whole being framed in a narrow white moulding. On this mount and close round the print were ruled four fine lines, a dark one close to, but not touching, the print: then a couple of white lines about $\frac{1}{32}$ of an inch apart: and then a second dark line, about as far away as those. This use of white lines and the grey mottled board served as a good text for working out our mounting exercise. But as I could not find a paper to exactly match Mr. Emmanuel's mount, I have used (and prefer it as lighter in tone) the Genova paper to be used as the covers for *July*. It is of the same surface texture, and is similar in style, but is lighter in tone; therefore, to my thinking, more sympathetic with the delicacy of the picture, and not so liable to over-accentuate its lightness; in combination with the Stone and Granite papers it will be found to provide a very effective and dainty setting to this little gem of a picture.

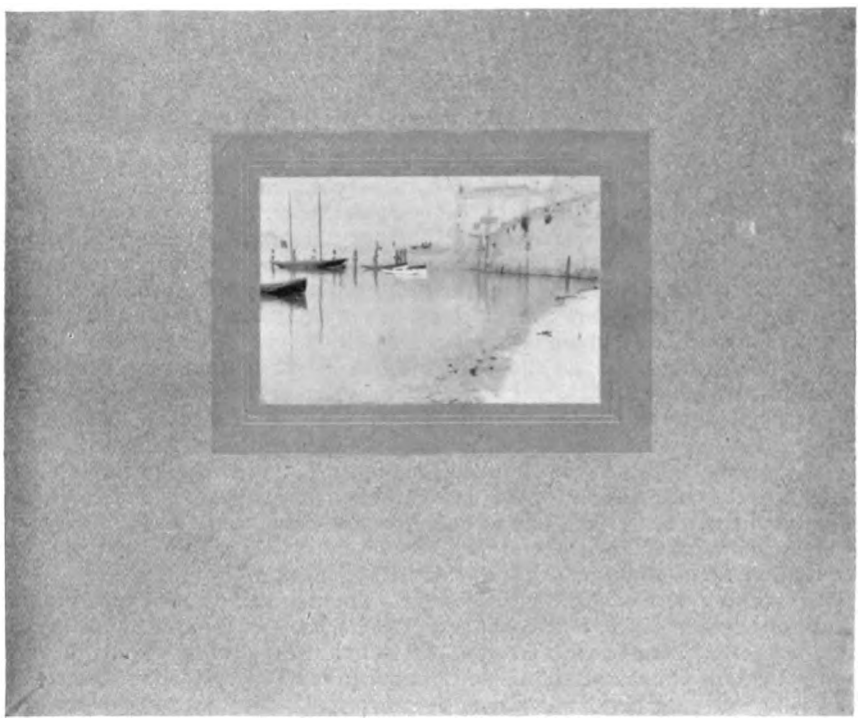
Our working details will be as follows:—The picture, when cut out, is first placed on a piece of the Stone paper (given as the covers this month), and that is trimmed away to a margin all round the print of $\frac{3}{16}$ in. This is then placed on a piece of the Granite paper (as to be provided by the covers for *June*), and that is trimmed away to show the thinnest line possible, as the effect is to be merely that of a fine line ruled in white ink. As we are to have two of these fine ruled lines, we have next to get the base for the second line, and this is done by placing our mount as far as made on a second piece of the Stone paper and cutting it away to a margin all round of a trifle over $\frac{1}{16}$ in. For the second white line we of course proceed exactly as we did for the first, taking care to keep the line of white (Granite) no thicker than the first line, else one will clash with the other and the effect of a couple of parallel lines in white will be entirely lost.

All is now placed on a third piece of the Stone paper, and that trimmed to show margins of $\frac{7}{16}$ at top; $\frac{1}{2}$ in. at sides; and $\frac{9}{16}$ at bottom. We are now ready for the final white line, to be obtained exactly as our previous ones were, keeping of course to precisely the same degree of fineness. When this is obtained, the whole of this inner mount is put on the final, the outside support, the bottom mount, which is to be of the Genova paper as will be given in the covers for *July*. The margins for this will be relatively, $2\frac{1}{4}$ in. at top, $3\frac{5}{8}$ at sides, and $4\frac{5}{8}$ at bottom, and our mount is then completed. If a smaller outside mount is desired, these margins must be kept to relatively; if reduced, they must be reduced in the same proportion all round.

It will be seen, if the number of papers are counted, that it may be called a very elaborate mount, as we have used in all no less than seven sheets of paper; the effect is, however, really a very simple one, that merely of two

Digitized by Google

colors with three white lines ruled thereon. It may be thought that the third, the outside white line, might have been dispensed with; but if the experiment is tried—and it will be a very useful one—it will be felt that the effect then is to give the two white lines close together near the print an undue prominence; the addition of the outside white line divides the attention, and helps the Genova to keep its distinct color value from the



MOUNTING THE EXHIBITION PRINT.—This month's scheme.

Stone paper; the Genova, directly on to the Stone, is a delightful effect for some mountings, but the white line here interpersed is more dainty and effective for our present purpose.

I have been glad of the opportunity to give this exercise in "fine cutting," as it is good practice in the use of the knife or guillotine, and equally good for training the eye in estimating and preserving regular widths in margins. It will also afford much help in suggesting the endless combinations such use of fine lines can give rise to. But they should not be indulged in unless the picture is to be framed and glazed, as the number of papers—and those not of large size—prevents their all keeping flat down while the print is being handled or is under inspection. Under glass pressure they of course remain perfectly flat, if the frame is properly packed up from behind, and the fine lines will thus have their full and proper effect all round.

Digitized by Google

MOUNTING THE
EXHIBITION PRINT.

THE HOUSE ON THE WALL.
By Chas. H. L. Emmanuel.

To be mounted as directed by Mr. Evans on page 133.

Digitized by Google

Digitized by Google

Figures in Landscape

Further details of a scheme under which an incentive is given to the "Society Outing." Prizes are offered to societies and to individual photographers. The illustrations are by courtesy of those who have already taken part in excursions on the lines here suggested.

In May of last year we gave in these pages some results of a "practical" summer outing, undertaken by the Hackney Photographic Society, and we offered, under certain conditions, to give awards in competitions arranged by photographic societies on the basis of similar outings. Not more than ten or a dozen societies accepted the suggestion, and most of them failed to induce sufficient members to compete. Hackney, the Photographic Club, the Manchester A.P.S., the Maidstone Camera Club, the Cripplegate Photographic Society, the Watford Photographic Union, and some others, had successful outings; while even those societies whose members turned up in small numbers found the interest so keen that they propose to repeat the experiment.

We therefore repeat our offer, that we will give two "Photogram Awards," one of bronze, and one of bronze and silver, for any photographic society holding a "figures in landscape" competition on substantially the following lines, viz.:—

1. Awards will be given to the best and second-best set of three prints resulting from exposures made during a specially arranged outing at which (*a*) each member has the opportunity of photographing at least two models, in at least three distinct sets of surroundings, and the same models are at the disposal of all members; and (*b*) the members devote at least three hours to serious study of these figures in landscape.

2. The arrangements for the outing, for date of closing the competition, etc., must be made by the society.

3. Announcement of the outing, and of the fact that studies of the models provided will be eligible for competition for *The Photogram* awards, must be made to all members of the society.

4. The judges may be appointed by the society; or, if

By G. T. White.

1st Award, Manchester A.P.S. Outing, 1903.

Digitized by Google

desired, judging will be undertaken by the editors of *The Photogram*, provided carriage of the pictures, both ways, be paid by the society. In any case the winning sets must be submitted to the editors, who shall have the right to see the whole of the competing sets, if they so desire.

IN DELAMERE FOREST, CHESHIRE.
By G. T. White.
1st Award, Manchester A.P.S. Outing, 1903.

5. The awards will only be given when at least twelve members of the society take part in the outing, and at least ten submit sets of prints for the competition. The awards may be withdrawn if the average work submitted by any society is considered distinctly poor.

The award is a specially designed symbolic plaque, five and a quarter inches wide, with pendant, illustrated and described in our next issue.

Societies' Award.—Should a sufficient number of societies enter the competition, a special award in solid silver will be offered to the society submitting the two best winning sets; judges to be appointed by the editors of *The Photogram*.

Individual Awards.—A bronze and silver and a bronze plaque are offered by the editors of *The Photogram* for the best and the second-best sets of three figure in landscape studies, made after March 30, 1904, and received at the office of *The Photogram* not later than October 30, 1904. The rules as to sending, return of competing prints, enclosure of pen-name, etc., will be the same as are given for our general prize competitions. The pictures reproduced this month (and in earlier issues, as well as in *Photograms of the Year 1902*) show the style of picture most likely to win recognition, viz., simply-costumed figures in landscape surroundings, so arranged that both figure and landscape are essential to the success of the whole.

For the benefit of secretaries arranging such competitions, the following suggestions are given.

THE BAGGING HOOK.
By Miss Kate Smith.
1st Award, Watford Photographic Union Outing, 1903.

Digitized by Google

By Alfred T. Ward.

2nd Award, Cripplegate P.S. Outing, 1903.

The photographers should be divided into parties of not more than six members; and the models and locality should be so chosen that each party may have plenty of room to work, with variety of possible background in each section, and sufficiently far from each other to prevent one party seeing much of the pose and arrangement used by the others. The models should be varied, and the landscape should also be as varied as possible, giving at least one open landscape or meadow, and one arrangement with ample shade for both models and background.

A convenient arrangement, used in several cases with success, is to have six models (a group of two, working together, counted as one model), six localities, six parties of photographers, and six divisions of time (say half an hour each). At the end of each period of time a horn or whistle should be blown, as a signal for each party and each model to move to a new locality. The models move (say) sunwise, and the parties in the opposite direction. This ensures variety in the resulting pictures, and yet gives ample opportunity for every photographer to display his full skill. It is a convenience to mark the limits of each "locality" with large numbers, on cards supported by short stakes; to give the leader of each party, and to each model, a card plan showing where he should be at each half hour; and to walk around the whole ground, pointing out the localities, before the work begins.

By H. G. Stollard.

1st Award, Cripplegate P.S. Outing, 1903.

Digitized by Google

Half a dozen is as large a number of photographers as can well work together, and it is a good plan to let each party have a "leader," who will carry the card of arrangements for his own party, and see that they keep together and duly move to their new positions. It is excellent training for the members (and especially for the more diffident ones) of a society if each one in a party takes his turn at selecting the position and pose for the model. Thus, the leader will pose the first model in the first locality, and his followers will each take the lead at a later locality. This still leaves plenty of time (in half an hour) for another member, or even more than one, to take a different pose in some different part of the same locality.

When a whole day can be given to the work, an hour or two before lunch should be given to a demonstration of outdoor posing and lighting by an expert; but to avoid servile copying, neither the model nor the backgrounds should be exactly similar to those provided for the afternoon.

We reproduce the key-plan used for the Hackney Society at Golden Green last year. The models were—1, a blind man led by a young girl; 2 and 5, ladies of twenty-five or thirty, simply dressed; 3, a gardener (see frontispiece); 4 and 6, girls of about seventeen, simply dressed.

THE BUTTERFLY.
By Miss Kate Smith.
1st Award, Watford Photographic Union Outing, 1903.

Time.	2–2.30.		2.30–3.		3–3.30.		3.30–4.		4–4.30.		4.30–5.	
Locality.	Party.	Model.	Party.	Model.	Party.	Model.	Party.	Model.	Party.	Model.	Party.	Model.
1. West lawn	1	1	6	2	5	3	4	5	3	6	2	1
2. Orchard and spinney	2	2	1	3	6	4	5	6	4	1	3	2
3. Back garden and yard	3	3	2	4	1	5	6	1	5	2	4	3
4. North paddock	4	4	3	5	2	6	1	2	6	3	5	4
5. East lawn	5	5	4	6	3	1	2	3	1	4	6	5
6. South paddock	6	6	5	1	4	2	3	4	2	5	1	6

By this arrangement each party has six different models in six different positions, but each model misses one of the positions and is photographed twice in one of the others.

Experience has shown that an outing and a competition such as have been outlined give a new interest to the life of a society; and we strongly urge the idea upon every committee which finds a difficulty in holding the interest of members during the summer. It is especially commended to those who have tried the ordinary objectless picnic and found it a failure.

Digitized by Google

The Photo-Secession.

A critique by Sadakichi Hartmann of the recent exhibition of the Photo-Secession at Pittsburg. Concluded from last month.

UNQUESTIONABLY the star exhibit in this collection was the group of prints by Eduard J. Steichen. His eighteen pictures were all gum-bichromates, a process that he has developed to rare perfection. They made the impression as if they were monotypes, printed in sepia with high-lights dashed in in pure Chinese white. His portraits are startling in their pictorial beauty, but not convincing as photograms. He has great power of characterisation, but his technique is so overburdened with mannerisms that it invariably discounts our full pleasure in the work. The largeness of his style and the superb way in which he handles masses appeal to us most strongly at the first glance, but at closer scrutiny they lose in value; we realise that they are largely made for effect, and dependent on certain tricks of style and manner. He can make straight prints if he wants to, and fully as beautiful as any of the manipulated ones. Why, then, does he insist on the imitation of inferior qualities, instead of beating the painters on their own ground, by striving to be their equal in the conception and composition of a subject?

Alfred Stieglitz was represented by fourteen prints. The majority of them were old acquaintances, but they still hold their own, and are excelled only by his own more recent work. His "Hand of Man" is a masterpiece. As usual with him, he made the solution of a problem the motive of his composition. In this case it was smoke and the confusing lines of railroad tracks. The murkiness of the atmosphere is marvellously well rendered, yet our interest centres at once on the main object of the picture, the locomotive passing a cloud of smoke straight into the air, while the trucks, signal posts, and silhouettes of surrounding sheds and buildings—astonishingly accurate in values—blend into the composition in a most delightful manner. Stieglitz, although the acknowledged leader in the new pictorial movement, has himself resisted all the temptations to overstep the limits of straight photography. And although his recent prints show a certain tendency towards the mysterious, he has applied none but photographic means. His "Hand of Man" is a straight print, only the rails have been darkened a trifle in the printing.

Edmund Stirling, our foremost Philadelphia worker, is more melodramatic than White, and rather pictorial than illustrative in character.

A very harmonious group was made up of the landscape work of W. B. Post, John G. Bullock, a refined talent in quest of *outré* effects, and the elegant and tiny pictorial portraits of Rose Clark and Elizabeth Flint Wade. Strange that Rose Clark should insist on joint authorship. Pictorial photography is essentially a personal art; it should be conceived and carried out by one person.

The less said about the work of the Pittsburg Camera Club the better; their contributions, with the exception of one print by R. L. Sleeth, were very amateurish and uninteresting. To chaperon the Photo-Secession was really an honor they did not deserve.

Among the prints of special interest I must still mention a "Morning

Digitized by Google

THE PAINTRESS
By Mrs. Käsebier.

The Photo-Secession (page 139)

Digitized by Google

Picture," a mother and child in an extremely long, upright panel by Eva Watson Schütze; several Chicago street scenes by W. T. James; a quaintly posed nude (apparently in utter collapse) by S. L. Willard of Wilmette, Ill., some clever sepia and charcoal effects by Mary Devens, and several clever transcripts of child life by Mathilde Weil. I must refrain from mentioning any more. The true vocation of the critic, according to Anatale France, is to narrate the adventures of his soul among masterpieces. If this be accurate, I have long overstepped the legitimate boundary of my profession, and the only excuse I have to offer is that there is a decided hitch about "masterpieces" in all public exhibitions. Thus I have faithfully tried to supply the "soul" and the "adventures" (or, if you like, "misadventures").

A PORTABLE DARK ROOM.

Designs and description by G. B. Robson, Trincomalie, Ceylon.

PHOTOGRAPHERS who, like the writer, are pilgrims and vagabonds on the earth, find the lack of a suitable dark room a great difficulty. A spare room is not always available, and even when it is, there is often an amount of bother and expense before it can be adapted to one's requirements, which make it scarcely worth while when one is expecting to have to "trek" again at any time. No really commodious and portable dark room has come under my notice in the market. Sectional dark rooms of wood are not sufficiently portable. Dark tents are portable, but they do not afford accommodation for serious working in the most desirable way, and the laths which compose the frame soon get rickety.

I have constructed for my own use a dark room which seems to combine the advantages of both the wooden and fabric dark rooms. It is compact, and yet both roomy and rigid. It can be left ready for work without taking up much room, and can be used for bromide printing and development. Moreover, it all packs up within itself in small compass, and will contain comfortably a fairly large photographic equipment.

The first requisite is a strong and well-made deal box about 3 ft. long, 2 ft. wide, and 1 ft. deep. Strength is necessary if the box is to stand knocking about, careful jointing if the box is to be light-tight, though a little putty will work wonders in that direction. In the bottom of the box cut out a piece about 8 in. by 6 in. or more, according to the size of ruby window needed. Keep the piece taken out, as it will be wanted. Then across the outside of the bottom nail strips of wood 2 in. wide, as in fig. 2, arranging the pieces which come round the aperture before made, so that a half-inch rabbet may be formed inside. Into this rabbet will fit the frame containing the ruby glass. The window may be made to open and close for bromide work by fitting to it the form of hinge shown in fig. 3. The bulb-shaped slots slip over the heads of screws, which should be made to hold them fairly tightly and yet allow the frame to be detached altogether when it is desired to replace it with the piece of plain wood for travelling.

Fig. 1 shows the interior fittings of the box. *a* is the sink, which is made by fitting three pieces of $\frac{3}{4}$-in. wood into grooves made to receive them. If red lead or shellac varnish be put into the grooves before fitting, and the whole sink afterwards receive a coat or two of varnish or white enamel paint, it will be quite water-tight. A lead lining is no doubt better, but adds

Digitized by Google

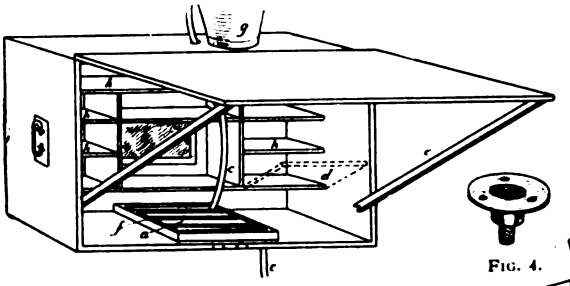


FIG. 1.—Interior fittings—*a*, sink; *b*, ruby window; *c*, *c*, delivery and waste pipes; *d*, hinged shelf; *e*, *e*, struts; *f*, grating over sink; *g*, water-bucket; *h*, shelves.

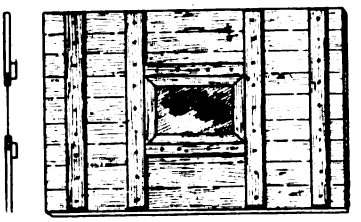


FIG. 2.—Shutter, with ruby window, which may be made detachable by means of the hinge shown in fig. 3.

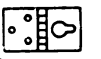


FIG. 3.

FIG. 4.

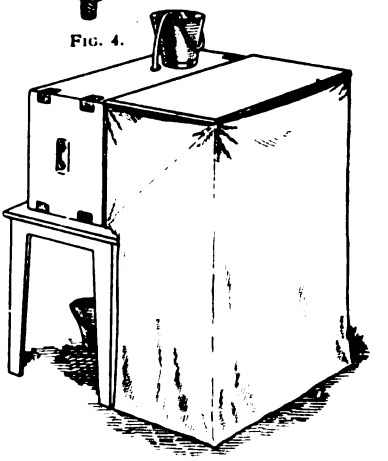


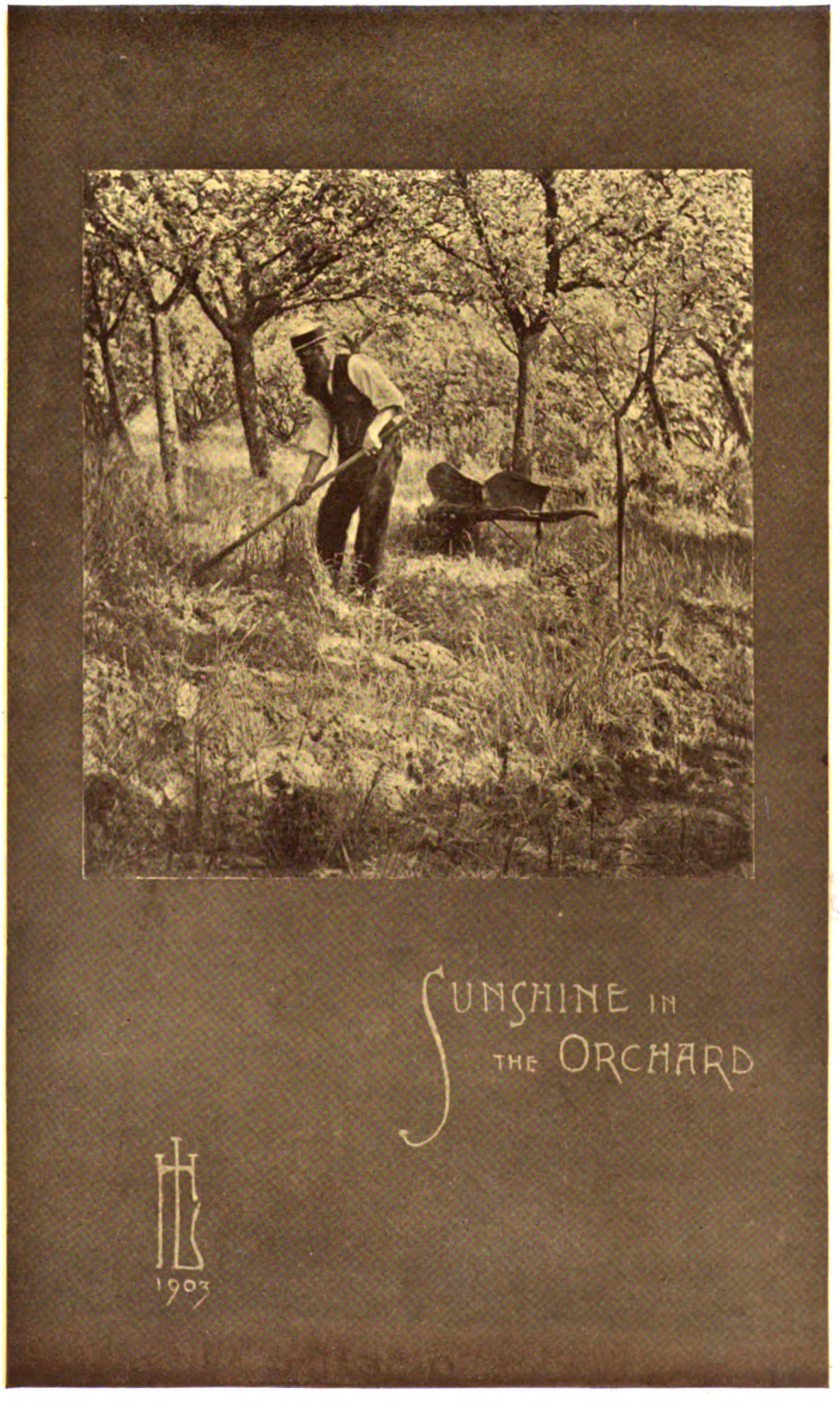
FIG. 5.

greatly to the weight of the box. In one corner of the sink a hole should be bored and a piece of flanged brass tubing (fig. 4) inserted so that the flange is flush with the wood. This will carry away waste. A similar fitment may be placed on the opposite side (top when in use) as an inlet for water. A piece of rubber tubing leads it over the sink.

Round the ruby window will be seen shallow shelves. These hold bottles, dark slides, plates, draining racks, and the like. When packing, they are useful for wedging up bottles with paper to prevent breakage. Over the sink is fitted a small detachable grating, *f*, on which to rest the developing dish. The alum and fixing dishes find room on either side of the sink. If desired, a light cover of wood may be hinged to either end of the bottom shelf, so as to cover the side dishes and give extra room for the arms, as well as to provide a dry space for opening bromide paper, etc. One such cover is shown by dotted lines, *d*. The lid of the box is hinged, and is held open by detachable struts. It may, however, be made loose and simply screwed on when packing, but the hinged lid is more satisfactory.

The complete box, fitted as described, forms the sink, shelves and developing table. The dark room proper is made of three thicknesses of fabric. Two of black twill and one of red cotton will serve. The cloth is cut and sewn so as to form a hood the shape of a Punch and Judy stage. Three sides are complete, and are joined by a top. A fourth side is open for a space the size of the mouth of the box. The equivalent of the opening where Punch appears fits on to the box. It may be fitted over the open lid and round the mouth of the box by means of elastic bands, but a better way is to make it exactly to size and then fit it round the inside

Digitized by Google



See Article, "Figures in Landscape."

By HAROLD W. LANE.

Digitized by Google

Digitized by Google

of the opening of the box by means of thin strips of wood. This ensures light-tightness. In that case the struts which hold up the lid of the box will hold up the free corners of the cloth chamber. A glance at the last figure will make this clear. The wooden box can be placed on a table or on another box of sufficient height, and the fabric will then hang to the ground as a chamber to be occupied by the worker. There he may sit in comfort with a roomy and rigid developing sink and shelves before him, with everything to hand for work. A lamp placed outside gives light by night without heat or smell.

When preparing to move, the fabric can all be folded within the box, along with all the necessary paraphernalia of the photographer. The ruby glass is carefully packed, and its place taken by the piece originally cut out. When all is packed and the box locked up, it will stand a good deal of rough usage, and be ready at any time to set up again with everything to hand.

Isochromatic Plates.

Although from the first institution of photography it was recognised that truth to nature was not to be relied upon in productions of the camera on account of the faulty rendering of the relative tone values of objects of different colors, it is strange how very little attention was paid by photographers generally to the possibilities afforded by the use of color sensitive plates of substantially rectifying this faulty rendering when plates of this character were first introduced. They seem to have been avoided as something uncanny. Now, there is a danger of going to the other extreme, and using the power of modifying the ordinary photogram recklessly and indiscriminately. Under normal conditions an isochromatic plate acts almost precisely as an ordinary plate, but it can be made to do much more. So much more indeed that it is quite easy, inadvertently, to produce a result on it more false than the ordinary photogram with the fault in the opposite direction. It by no means follows, therefore, that the use of a color sensitive plate ensures a gain in correctness. In using the plate without a light filter whatever difference is obtained will be a gain, but a light filter of unsuitable color or excessive depth necessarily produces faulty rendering of tones. There are plenty of examples about from negatives of yellow flowers, which are rendered as white flowers, and of landscapes in which all sense of distance is lost owing to the use of unsuitable screens. The choice of the screen for landscape photography particularly requires judgment. The same treatment that would render a bunch of blue and yellow flowers in correct rela-

Digitized by Google

tion would under most circumstances give an unnatural transcript of a field of wild mustard under a blue sky. Pictorial effect often requires a sacrifice of actual truth to secure the semblance of truth, and the repose of a hazy distance, often an essential point in making a picture, may be lost, and the clouds may be rendered with an unrealistic solidity by a slight miscalculation in the use of a screen. Isochromatic plates place a great power in our hands, but it is a power that can easily be misused.

Old Developing Solutions.

Of all fields for experiment in photography one would imagine that most thoroughly explored would be the influence of modifications of the developer upon the negative, yet one could hardly find half a dozen photographers in conclave who would agree upon even simple points in connection with the subject, which a single experiment, conducted scientifically, would definitely settle. It is difficult to imagine how the idea arose that an old, previously used developer is the best for an over-exposed plate; it is still more difficult to understand why this legend of the Middle Ages gets repeated whenever the introduction of a new developing agent affords the opportunity. Probably the fact that an old developer acts slowly, and in this respect similarly to a highly restrained developer, originated the conception that their other properties are alike, or it may be that it was assumed that a used developer must have acquired an addition of bromide from the reduced bromide of silver of the plate, and that this was equal to an addition of bromide to the developer. If anyone who indulges in rapid hand-camera work and has to get the most out of plates which have received the minimum of exposure will, by the very simple experiment of comparing the results he gets, using freshly prepared developer with those obtained using the same developer after it has been kept until partially oxidised, exercising sufficient patience with the latter to arrive at the same stage of development, he will doubtless discover that there is a desirable quality given by the slower development, which is absent in the negatives developed in the ordinary way. Still greater will he find the difference in the resulting prints. If it be admitted that the quality of the negative is influenced by the method of preparing the developer, it stands to reason that the method which gives the best results with under-exposed plates will not give the best results with those over-exposed; hence, if old developer helps towards securing those qualities which under-exposure is inimical to, to apply the same developer to plates which are unexposed, and which consequently require treatment of a different and opposite character, is clearly the wrong procedure.

The special form taken by this issue of *The Photogram* obliges us to hold out the continuation of the "Six-Plate Promenades" and the "Portrait and Studio" articles. The June issue will also be a special one, apart from the inclusion of the directory of the dark rooms throughout the world where *The Photogram* sign is shown. It will contain, amongst other attractive features, a review of the work of Mr. Percy Lewis, with which will be presented a two-color reproduction of one of Mr. Lewis' lesser known Venetian pictures.

Digitized by Google

PICTORIAL PARADISES.

Holiday Haunts for Photographers.

AWARDS.

1st prize (£1, 1s.): "Kurort" (James Meadmore, Harrow). 2nd prize (10s. 6d.): "Monkchester" (Harrop P. Wight, Gosforth). Honorable mention: "Albo" (A. J. Loughton, Nottingham); "Desmoulines" (Herbert Mills, Bolton); "Bendectine" (W. Foster Brigham, Scarboro'); "Radix" (Robert Marshall, Grangemouth); "Resident" (Clarence Ponting, Scarboro'); "Reward" (P. S. Joshi, Bombay); "Iphote" (W. Fry, Manchester); "Mercurius" (W. H. Womersley, Shipley); "Monte Christo" (Robert Mackay, Leeds).

With the summer season just upon us, and showing signs of repentance from its evil ways of last year, there are peculiarly good reasons for publishing the experiences of readers who have sought "fresh fields and pastures new." We only regret that we cannot make space for a larger proportion of the total number sent in. As it is, we have had to compress our contributors' letterpress, a liberty which we hope is pardoned, since it permits the description of a larger number of haunts.

ETAPLES.

ETAPLES is a fishing village at the mouth of the river Canche, about seventeen miles south of Boulogne. It is a pleasant journey of four and a half hours from London, *viâ* Folkestone and Boulogne, and in the summer months the fare can be managed at a trifle over a sovereign. The Paris express trains stop at Etaples, so that it can also conveniently be included in a more extended tour.

Etaples is almost as cheap as any place can be, and it has not yet been spoilt, though it has become known to many English artists, whose advent seems to have driven away the native artists who formerly frequented it. The dinner tables at the Hôtel Ioos are full of our countrymen and countrywomen, for we all dine at Madame Ioos', though we may have our rooms elsewhere.

The wealthy amateur in search of the more refined existence of Grand Hôtel life with tennis, golf, and motoring, has but to take the electric tramway from Etaples to Paris-Plage. Etaples has its fishing fleet and fishing folk, the latter all too ready to aid the photographer in getting his figures composed aright, and always offering their services as models. The quay is an endless source of interest when all the fishing boats are unloading and the women carrying away the fish to the market hall. Even at low tide, when almost all the boats are away, there are many chances for picturesque seascapes. The little town shows some animation on feast days, and twice a week on its market days, whilst the quiet streets and quaint old church are always of interest to the artist. In the country round, on foot (or, better still, with a cycle), one can reach the loveliest of villages, and there are sand dunes and pine woods near the shore. The well-kept roads (without hedges to block the view) lead over a well cultivated, undulating country, and one meets everywhere picturesque country-people busy in the fields, who seem to invite one to make pictures of

FISHING BOATS, ETAPLES.

Digitized by Google

them. One of the best roads keeps close to the river Canche, and where bridges span the river there are many charming points of view. This same road leads to Montreuil-sur-mer, now some nine miles from the sea, an ancient fortified town on an elevation commanding the surrounding country. The village of La Calotterie and the river near the railway should not be missed. Halfway to Montreuil a road to the left leads to the villages of Tubersent and Courteville, and on either side of the road are some of the most picturesque cottages imaginable, and, further on, the farmyards of Lefaux find great favor with artists. These excursions into the surrounding country prevent us from wearying of the fishing-boats and fishing-folk of Etaples, which are sure to figure very largely in our work owing to their great attractiveness, and it is perhaps the immense variety of subject afforded by the place which makes it possible for so many artists to go back to it year after year, and in some cases to take up their abode there permanently. KURORT.

IN THE MARKET, ETAPLES.

BYEWAYS OF PATTERDALE.

Around Patterdale are many quiet spots unvisited by the tourist who "does" the Lakes. On the road to Pooley Bridge is the picturesque village of Eamont Bridge, near to which is the old Hall of Yanwyth, a fortified manor-house with mullioned windows and carved oak door looking out on its courtyard.

By the lakeside to Howtown some charming views of the lake are to be had from a rough path shaded with birches. The old farm of Glencoin is worth a visit—quaint old kitchen with heavy rafters and blackened walls.

Away towards Brothers Water and the Kirkstone Pass, lie one or two hamlets off the track of tourists, where one finds many little *genre* pictures of the dwellers' every-day life. The coaches pass them on the way to Windermere. Hartsopp is now only a collection of cottages and a farm or two, but full of pictorial material—the carved balconies of the cottages and their picturesque interiors, figure studies, such as the blacksmith, the dalesman and his hounds creeping on foot amongst the crags, the village wedding, and many an aged dame outside her cottage door. For pictorial possibilities, to say nothing of a really healthy holiday, I can speak well of the lesser known villages of the Lake District.

ROBIN HOOD'S BAY.

Robert Mackay has spent a portion of each holiday for many years past at Robin Hood's Bay, an East Coast fishing village. From the sea the houses appear as if piled one on the other up the two banks, which flank a ravine through which runs a lively beck. So irregular is the place that a stranger might be there a week without being at all sure of his bearings. The charm of the place is its variety. The Sea—wave studies, rock-pools, cliffs and scaurs; the Moors, Woods and Dales. The place is without a rival in offering "quaint nooks and corners of the bay, fine cliff scenery, and inland dells and ravines."

BALCONY, HARTSOPP.

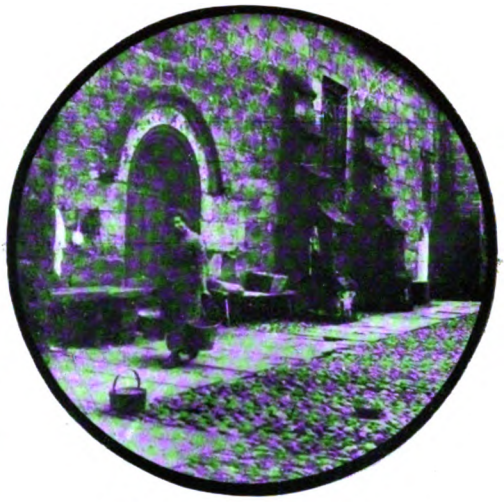
Digitized by Google

REDMIRE.

A small village in Wensleydale, and reached from Northallerton or Hawes Junction *via* the N.E.R. single line railway, which runs between these two places. Bolton Castle, Bolton Ghyll, and Redmire Force, are among the subjects in which the locality is rich. There is some very fine river scenery. Good farmhouse accommodation is procurable. MERCURIUS.

DABHOI, INDIA,

is recommended by P. S. Joshi of Bombay. It is one of the ancient cities of the Gujaratha district, and is reached by the Gaikwars State Railway. Dabhoi dates back to 1294, and is full of magnificent Hindoo structures. The view is of one of the four gates by which the great wall of the city is traversed.



THE COURTYARD, YANWYTH HALL.

DOUGLAS AND THE ISLE OF MAN.

Douglas old harbor for shipping studies, says "Desmoulines": few places richer, and the houses and shops flanking the north side of the harbor aid the photographer. Inland there are the glens and valleys unsurpassed in England. They should be visited about Whitsuntide. Rumors of buffets installed all about the island need not disquiet the intending visitor; they are always at the entrance to the glens, and do not deface the scenery.

AT THE CHAPANÉR GATE, DABHOI.

STONEHAVEN.

A Flemish-looking town, built on the edge of a round bay on the Kincardineshire coast—that is Stonehaven. Narrow streets, the outside stairs of its curiously gabled houses, picturesque fisherfolk, and the craft in the harbor provide titbits innumerable for the camera. Near at hand is Cowie, a little fishing village; and behind, the heather-clad hills and woods, such as Den of Logie, Dunnottar and Kirkton of Fetesso. Stonehaven is eleven hours from London, three from Glasgow and Edinburgh, and has a stiff golf course and other necessities of life. RADIX.

SCARBOROUGH

is praised by three readers —Clarence Ponting, W. Foster Brigham and F. J. Loughton. Their totalled

LOW WATER IN DOUGLAS HARBOUR.

Digitized by Google

A ROUGH BIT OF SEA AT SCARBORO'.
By Clarence Ponting.

wisdom leads the photographer to visit Scarboro' if he wants to meet with any of the following:—Quaint red houses and narrow streets; heavy seas (in winter and spring more especially); beach scenes and figures, such as worm diggers; shipping in the harbor and at sea; the herring fishing fleet, which in the autumn fills the town with burly Scotchmen and bonny Scotch girls, and all the other folk connected with the herring fishery. There are numerous picturesque country villages within an easy distance of the town.

SOME OTHER HAUNTS

favored by competitors are as follows:—

Whitby for odd corners and groups of fishing people. A place from which to visit the picturesque Robin Hood's Bay.

Studland (Dorset), four miles from Swanage; quiet centre for rural scenery.

Richmond (Yorks), castle, river, and steep, narrow streets of the town.

Alnwick (Northumberland), castle and park (fifteen miles in circumference).

Barrow-in-Furness for excursions into the "Lakes" by coach or steam yacht. Twenty different cheap trips.

Broughton-in-Furness. Quiet villages (Ulpha, Scathwaite, etc.) of the Duddon valley. Marple (fourteen miles from Manchester), river and pastoral scenery.

The scoring for the Series prize of £5 5s. now stands as follows:—W. Foster Brigham, 8; Clarence Ponting, 6; Chas. H. Evans, 4; Jas. Meadmore, 4; H. P. Wight, 2; Gino Bellotti, 2; A. Edwards, 2.

The "Architectural Detail" prints should reach us on May 1st.

The competition for the month is "Natural History"—£1 1s. and 10s. 6d. for the best examples of the photography of animals, flowers, and other objects included under the term "Natural History." Last day, June 1st.

The "Clouds" Competition (last day, September 1st). The following notes, crowded out of previous issues, may be borne in mind by intending competitors. The prizes are for the best photograms showing cloud forms—their shape and height, principally. Illustrated manuals of physical geography will show the typical shapes of cumulus, cirrus, cirro-cumulus, rain-clouds and others. An orthochromatic plate and yellow screen are essential to effective cloud photography, in which it is often desirable to exaggerate the contrasts, and to show details invisible to the naked eye. Development is adjusted to the same end; some workers prefer to over-expose, over-develop, and reduce with Farmer's reducer, whilst others obtain contrast directly by development. Those who have a plane-parallel cell will use it as their light filter, deepening the solution as the subject needs, or exposed, fixed and washed lantern plates may be dyed by dipping in dye solutions of various strengths. Chrysoidine is a suitable dye for the purpose.

Books, etc., Received.—*Deutscher Photographen-Kalendar*, 1904 (Weimar: K. Schwier; M. 2). The current issue of this most complete directory of the German photographic trade. The threefold arrangement whereby one can find the maker of a given article, the people in a given town, and the address of a given firm, is excellently conceived.—*The Post Card Connoisseur* (London: Collectors' Publishing Co.; 6d.). A dainty monthly of the post card cult, with the immense claim to the affections of cartophiles, that it presents six cards with each issue.—"Outdoor Portraiture," by Miss Mathilde Weil (No. 58 of *The Photo-Miniature* (London: Dawbarn & Ward; 6d.).—"Combination Printing," by A. Horsley Hinton (No. 59 of *The Photo-Miniature*).—*Photographie sans objectif* (Paris: Gautier Villars; 2 fr. 50). A manual of pinhole photography, containing, we fear, too much trigonometry for the general reader, but much of practical interest also.—*The Irish Amateur Photographer* (Dublin: *Figaro* office). A photographic organ for Ireland, readable and brightly produced.

Digitized by Google

FORTHCOMING EXHIBITIONS AND COMPETITIONS.

Particulars of Exhibitions are given when first announced, and again when it is time for entries to close. Will secretaries who wish insertion please mention details below, and note that last day is 12th of each month for publication on 25th? The Editors will feel grateful for the Exhibition catalogue as soon as published.

En. = *Entries.* *Pic.* = *Pictures.* *Ex.* = *Exhibition.* *G.* = *Gold Medals.* *S.* = *Silver Medals.* *B.* = *Bronze Medals.* *O.C.* = *Open Classes.* *Sec.* = *Secretary.*

(1) *The French Salon* (Photo-club de Paris).—En., March 15. Pic., April 10. Ex., May 3 to June 5. Sec., Paul Bourgeois, 44 Rue des Mathurins, Paris.
(2) *Devonport C.C.*—En., May 12. Pic., May 20. Ex., May 24 to 28. 4 O.C. S. and B. Sec., A. J. Catford, 78 Charlotte Street, Devonport.
(3) *Glasgow* (Municipal Exhibition in the Camphill Gallery).—En., May 7. Ex., June to September. £20 in prizes. Address, The Secretary, Art Gallery and Museum, Kelvingrove, Glasgow.
(4) *Brussels* (Belgian Association Lantern Slide Competition).—Last day, Oct. 15. Sec., M. Vanderkinder, 97 Avenue Brugmann, Brussels.
(5) *Kodak.*—£1000 in prizes. Circular from Kodak, Ltd., 43 Clerkenwell Road, E.C.
(6) *Barnet £500 Competition* for work on Barnet plates, films, and papers. 19 Classes. Last day, Dec. 31. Circular from Elliott & Sons, Ltd., Barnet, Herts, England.
(7) *Ilford.*—£750 in prizes. Particulars from Ilford, Ltd., Ilford, E.
(8) *Coxin* (W. Butcher & Sons).—Sixty-eight prizes for users of the Coxin daylight development method. Last day, Oct. 31. Circular from Camera House, St. Bride Street, London, E.C.
(9) *Hove C.C.*—Ex., Nov. 23 to 26. Sec., A. R. Sargeant, 55 The Drive, Hove.
(10) *Southsea P.S.*—Ex., Dec. 2 to 8. Sec., F. J. Lawton, 20 Clarence Square, Gosport.
(11) *Southampton C.C.*—Ex., Dec. 13 to 20. Sec., S. G. Kimber, Oakdene, Highfield, Southampton.
(12) *Vienna P.S.*—Technical and pictorial photography and "process." Ex., July 14 to Sept. 30. Sec., W. Burger, Karmelitergasse 7, Vienna II.
(13) *Ensign Films.*—£100 in prizes. Houghtons, Ltd., 88–89 High Holborn, London, W.C.

Catalogues, Price Lists, and Descriptive Pamphlets.—*Watkins Meter Co.*, Hereford. Latest Watkins helps in exposure and development.

Hobbies, Ltd., 12 Paternoster Square, E.C.—1904 list.

Houghtons, Ltd., 88, 89, High Holborn. W.C.—Hand cameras for 1904. 42-page list.

Thos. Baird & Sons, 34–36, Queen Street, Glasgow.—Supplementary list describing most modern apparatus.

Raines & Co., Ealing, W.—A big list of this well known firm's prices for all kinds of enlarging, printing, framing, working up, and half-tone block-making.

F. V. A. Lloyd, 15 Lord Street, Liverpool.—Next to a chat with Mr. Lloyd himself, let the Liverpudlian secure his latest list in which is described a selection of reputable apparatus.

"Norwood, Ltd.," is to be the new title of the Sandell Films and Plates Co., Ltd., which is to be incorporated with a capital of £80,000.

Showcards in great and tasteful variety reach us from Messrs. Elliott & Sons, Ltd., who beg any dealer who has not received a parcel to make application to them at Barnet, Herts.

A Leather Reviver which we have found to answer excellently for the renewal of old camera coverings, straps and the like, is made by Mr. J. E. Lockyer of 244 Evelyn Street, Deptford, price 6d.

Dealers should see that *Houghton's Monthly* reaches them regularly. We understand that a line to Messrs. Houghtons, Ltd., will ensure the arrival of each issue of a magazine which has much to say of this firm's many activities.

The Tabloid Case.—The appeal of Thompson & Capper against the recent judgment of the late Mr. Justice Byrne, supporting Messrs. Burroughs Wellcome in preventing goods other than theirs being sold as "tabloid," has now been dismissed by Lord-Justice Stirling.

The Largest Photogram in the world was on exhibition last month in London in the shape of a huge enlargement (40×5 ft.) on one piece of Rotograph paper. A facsimile of it is to be shown at St. Louis, but the British duplicate will travel round the country, appearing first at Glasgow early this month.

Fallowfield's "Courier" is a monthly journal issued by the well known house in the Charing Cross Road. Curiously enough, the first issue does not refer to the periodical which some years ago was published by Mr. Fallowfield. Part of its title was *The Remembrancer*: the rest we forget, but in reviving it we are glad the title has suffered compression. *The Courier* is for the trade, touches a hundred vital matters, and is sent post free to dealers.

The Far East in the West End.—Not content with their Japanese exhibition in the Strand, the Kodak Co. have arranged a collection of Far Eastern pictures in their Brompton Road establishment. The gallery is hung with enlargements from Kodak negatives of scenes in Japan, Korea, and Russia, and thus provides the West End resident with an opportunity of studying the Eastern question at home, and at the same time of yielding to the fascination of Kodak photography.

The Barnet "Specially Fast" Plate is a new issue of Messrs. Elliott's which they can feel pride in adding to the list of recent new materials from their factory. Although of exceptional speed, the emulsion is of fine grain and beautifully clean in working. It is a plate of the kind which, five years ago, the photographer despaired of getting. But the modern emulsion maker is not slow to respond to the calls made upon him, and Messrs. Elliotts' staff are doing their part admirably.

Titles on Blue Prints are readily written by means of a blue solution sold by W. Tylar as "Ferro Bleach." The preparation quickly discharges the blue color, and, as it does not run or spread, is suitable for draughtsmen desiring to add to or correct copies from tracings. When oxalate of potash solution is used for this purpose the blue color is liable to return in time unless the print is washed, but we have not had Ferro Bleach long enough to ascertain whether it acts also in this way. Its price is 1s. 3d. per bottle, post free, from 41 High Street, Aston, Birmingham.

The Schleussner Orthochromatic Plate (Thos. Christy & Sons, Old Swan Lane, London, E.C.) is a variant of the Viridin plate of the same maker which we were able to report upon favorably some time ago. The new plate is intended to meet the requirements of those who must have a rapid orthochromatic plate, and in this respect we can congratulate the makers on their production. The plate possesses those other qualities—fineness of grain, mechanical perfection, and freedom from fog—which we expect (and find) in the Schleussner manufactures. It is very rapid: its sensibility to yellow-green is very good, and on prolonged exposure extends into the orange up to the "D" line.

A Note of Earnestness and Confidence ran through the whole of the speeches at the inaugural dinner of Houghtons, Ltd., held on April 9th, just as these pages were going to press. The firm is now the largest employer of British labor in the photographic manufacturing business, and expects to increase the number of its hands by a further hundred or more within the current month. All the principals, as well as the whole staffs of the several firms combining to form Houghtons, Ltd., are finding increased rather than diminished work under the new regime, the factories are being greatly extended, and as they are now manufacturing the cheapest and simplest as well as the most perfect and elaborate cameras, there is every prospect of a great increase in their trade with the colonies and abroad, as well as in the home market.

Digitized by Google

"Hand-Camera Instruction," an 8-page leaflet wherein is given much plainly expressed advice on hand-camera work. Sent free by the Watkins Meter Company, Hereford, to whom dealers should apply for distribution copies.

Eastman Kodak Company of New Jersey has declared 1½ per cent. (being at the rate of 6 per cent. per annum) upon the outstanding preferred stock, and of 2½ per cent. (being at the rate of 10 per cent. per annum) upon the outstanding common stock, payable as the usual quarterly dividends.

A Roller-blind Shutter.—The "Solid Box" Shutter of the Altrincham Rubber Co. deserves notice for its small size, strong construction, and ready handling. It is made from one solid piece of mahogany, and weighs but 2½ oz. Set to "Instantaneous," its range is from $\frac{1}{15}$ to $\frac{1}{75}$ sec. Time exposures are made in the usual way, but if the shutter be fitted with the company's timing device (3s. 6d.) exposures of $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{4}$, 1, 2 and 30 secs. may also be given automatically. The price of the shutter is 10s. 6d.

"Bromide on Fabric" partly describes a new material just issued by Messrs. John J. Griffin & Sons, Ltd., Sardinia Street, London, W.C., under the name of "Photolinol." This material resembles linen, but is singularly transparent, a property which at once suggests many uses for it in public and private decoration. The material itself is said to be perfectly waterproof—and it certainly seems so—and is thus qualified for outdoor purposes such as the illustration of sandwich boards, and in other advertisement schemes. The sensitive coating is a bromide emulsion, exposed, developed and finished like any other bromide emulsion. This brings us to what we may call the normal photographic uses of the new material in contact printing and enlarging. Here the special qualities of "Photolinol"—its peculiar texture—becomes evident. Without putting the printer to the trouble of bolting cloth or like expedients, it gives a breadth or character to the print, which, if we are not mistaken, will bring about its adoption by many a pictorial worker. And this new power comes to those already acquainted with bromide without asking them to learn anything fresh, except that the finished prints must not be laid out to dry, but must be hung up so as to leave both back and front free. To its other virtues "Photolinol" adds that of cheapness—2s. 10d. per packet of one half dozen whole-plate pieces. Messrs. Griffin will gladly send readers of *The Photogram* a book descriptive of its many and various applications.

A New Printing Paper.—Photographic manufacture seems to have reached a state of such high development that startling novelties in the way of apparatus or materials are more matters of rumor than of fact. It is not often that one can describe a new introduction as both of general importance as well as of novel character, but that is certainly the verdict which may be passed on a new printing paper, now being introduced under the name of "Helion." We believe "Helion" is British throughout—in invention, manufacture and capitalisation. It is issued by the Helion Co., 11 Billiter Square, London, E.C. What is Helion, then? It is a plain print-out paper. By "plain" we mean a paper innocent of gelatine or collodion emulsion, with their attendant drawbacks. There may be colloid bodies, other than size, which enter into the manufacture of "Helion," but arguing from the sensitive paper and the finished prints, we should say not. So it comes about that half the *petits misères* of the amateur printer and half the precautions of the practical man are dispensed with, and in its final state the print—on the thinner bands of paper—lies flat, or, in the thicker varieties, holds itself stiff and stout; in both cases free from curl and cockling. The advantage is one valued by platinum printers and appreciated by those who mount by the modern multiple tint method. As regards negative, Helion does not take so kindly to veiled flat negatives as might be wished, and unlike P.O.P. in this respect, offers no inducement to the maker of this class of negative to multiply his evil progeny. But given a decent negative, especially such a one as will print in carbon or platinum, one obtains prints of singular richness and beauty. The chemical treatment is simple. The prints are first washed until the washings run off clear, and here, let it be noted, the emulsionless paper scores, in that it permits hot water to be used if thought advisable. Toning now follows in a gold or platinum bath. Personally, we prefer the platinum formulæ for the nicety to which the production of a brown, sepia or black tone can be adjusted. After a "stop bath," the prints are fixed and washed in the usual way. The Helion papers are made in six different varieties of texture and tint—rough, smooth, and cream. The thin varieties cost 1s. 9d. per thirty quarter-plate pieces; the thicker, 2s. We do not exaggerate when we describe Helion as a printing paper for all types of photographer, excepting only the admirer of an enamel surface. In variety of color and texture the paper offers the widest range of choice, and, most important to those of limited experience, the manipulation is almost exactly that of P.O.P. We prophesy a wide popularity for the new paper.

Toning P.O.P. by Heat.

DEAR SIRS AND MADAM,—Your interesting article in the March number on re-toning P.O.P. prints reminds one of self-toned albumenised paper made years ago by Rivôt, of Willesden Green, in which the desired tone was obtained by immersing the prints in hot water, or ironing them with a hot iron: the remarkable part about it being that whilst the experiments you record show that P.O.P. prints can be made warmer in tone by the application of heat, Rivôt's albumen paper was made colder, although in each case the application of heat is made after fixation and washing. This latter paper was made with chloride of gold and ammonia and ammonio-nitrate of silver, being superior to the self-toned papers on the market now.—Heartily yours in the work,

ARTHUR WHITING.

Tooting, S.W., 2/4/04.

Preserving Starch Paste.

DEAR SIRS AND MADAM,—In your April issue Alex. Mackie commends starch paste as a mountant, but says there is no way of preserving it so as to retain all its properties. I do not know what properties are referred to, but I always use it myself as preferable to all others for simplicity and cleanliness. I have it made in the kitchen, boiled till it thickens, then stir in about a teaspoonful of 10% solution of formalin. When it cools stir thoroughly so as to break up the jelly, or force it through muslin. I find it keeps perfectly, the formalin being a very powerful antiseptic and not at all injurious to a gelatine print.—Yours, etc.,

F. A. JONES.

2 Argyle Road, Ilford,
Apl. 1st, 1904.

Moonlight Exposures.

DEAR SIRS AND MADAM,—From your February number I learn that you suppose it is impossible to take a negative by moonlight unless by exposing for more than an hour.

I beg to remark that I have several times photographed by moonlight with an exposition of a quarter minute, which is the longest time it is possible to use for exposition, when the moon itself shall be on the photogram.

I enclose a copy of such a moonlight effect.—Yours truly,

G. C. STOCKHOLM.

Copenhagen, Denmark,
March, 1904.

[The prints are excellent renderings of moonlit landscapes.—EDS.]

PRINCIPAL CONTENTS.

Advanced Hand-Camera Work. By Walter Kilbey.
Mounting the Exhibition Print. By Fredk. H. Evans.
Figures in Landscape.
The Photo-Secession.
A Portable Dark Room. By G. B. Robson.
From my Note-Book. By Alexander Mackie.
Pictorial Paradises: Holiday Haunts for Photographers.
Forthcoming Exhibitions and Competitions.
Trade. Correspondence.

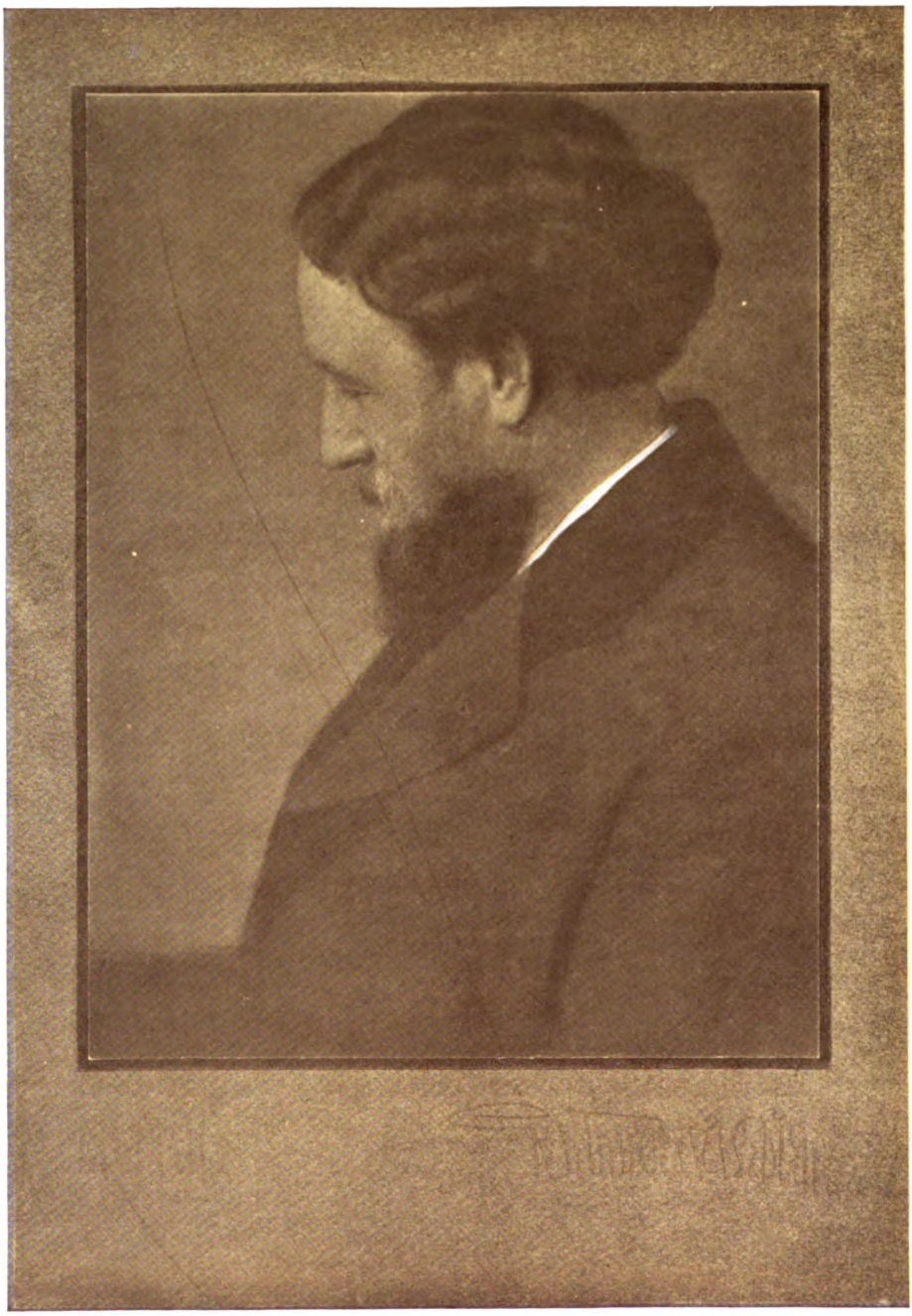
The Process Photogram

contains the whole of *The Photogram plus* the following articles and notes relating to photo-mechanical processes:—

Practice and Theory of Half-tone Etching. By E. Klimsch.
A New Collodion Emulsion. By Baron von Hübl.
Determining Half-tone Lineature.
Modified Collotype for Beginners. By H. G. M. Barstow.
Sensitising Collodion Emulsion for Tri-color Work.
Current Topics. Correspondence.

Digitized by Google

Digitized by Google



H. SNOWDEN WARD.
By Gertrude Käsebier.

Digitized by Google

THE PHOTOGRAM

VOL. XI. JUNE, 1904. No. 126.

Editors.
H. SNOWDEN WARD.
CATHARINE WEED WARD.
GEORGE E. BROWN, F.I.C.

COPYRIGHT.—*This Magazine as a whole, with its contents, both literary and pictorial, is copyright; and the copyright is registered in Great Britain and the countries forming the Copyright Convention. Our contemporaries are very welcome to quote from our pages (with acknowledgment), but we propose to protect ourselves and our advertisers against piracy.*

MOUNTING THE EXHIBITION PRINT

BY FREDK H. EVANS.

This series of progressive lessons in the modern border-mounting of prints, which commenced in the January number of The Photogram, *is continued each month throughout the year. The instruction is given in reference to an actual example to be mounted by the reader on the paper, or papers, of the covers.*

This month's exercise.—Print:—"A Snowy Hillside," by Will Cadby. Mounting Papers:—Lindenmeyr's "Stone" (last month's covers), Lindenmeyr's "Granite," Lindenmeyr's "Genova" (to be used as covers next month).

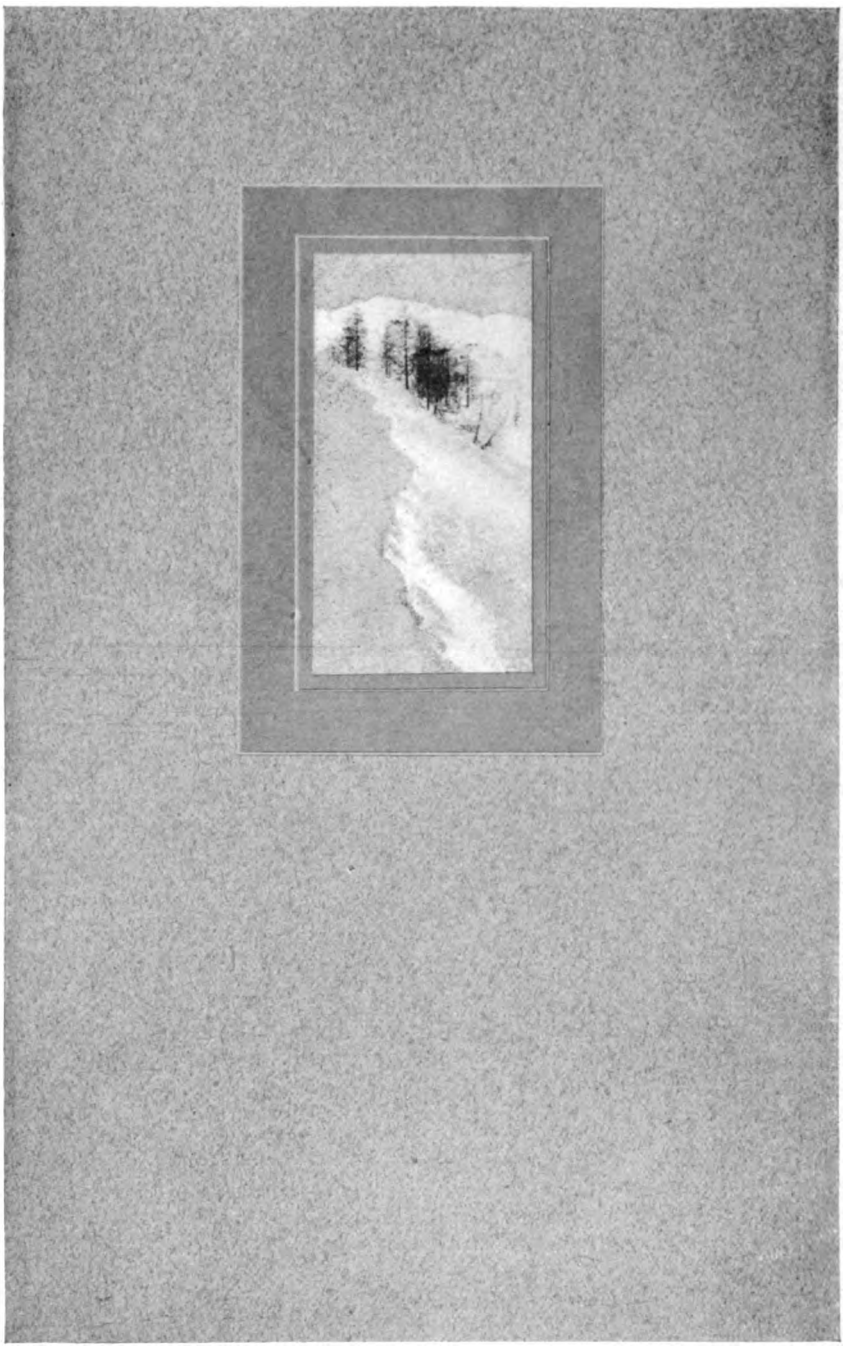
OUR mounting energies for this month are to be expended on a very delicate little sketch-like "gum," by that well known and most artistic worker Will Cadby. It is a reminiscence of his days in Davos Platz, a snow-clad hill and a few trees, most expressively and cleverly rendered in the difficult medium of "gum." As this delightful little sketch became my property in an unmounted state, I feel free to mount it as my love for it suggests, and need not fear or tremble as I must had I to alter the artist's own mounting.

Of course with so delicate a sketch a light mount is the first necessity; anything of a strong or dark nature would over-accentuate its delicate brightness; but, on the other hand, anything too light in tone or style would as fatally lower its values and degrade its purity. I have therefore gone to light papers, to the uses of which I shall have the pleasure of introducing the reader during the next few months.

The sketch is first to be carefully cut out as heretofore, and then stuck on to a piece of the Stone paper (the last month's covers), trimming it to show a first margin of $\frac{1}{8}$ in. all round. This is then placed on a piece of the Granite paper, forming the covers for this present month's issue, and that trimmed to show as thin a line as can be cut. This has now to be placed on a second piece of Stone paper, and that trimmed to a margin of $\frac{7}{16}$ in. at top and sides, and $\frac{1}{2}$ in. at foot: the second white line has now to be got, by sticking what we have so far built up on to a further piece of the Granite paper, and trimming it away to as thin a line as before. We are now ready for the final, the bottom mount, which is to be of a piece of the Genova paper that will form the covers of *The Photogram* for July.

If all is carefully and accurately carried out, this little scheme will, I think, meet with approval for daintiness and delicacy, and be allowed to have exercised its proper function of showing off the print to its fullest advantage.

Digitized by Google



MOUNTING THE EXHIBITION PRINT.

Mounting Scheme of "A Snowy Hillside." By Will A. Cadby. Described by Mr. Evans on the previous page.

Digitized by Google

Critical Appreciations

Early recognition of men of power has always been an especial aim of The Photogram. *The present appreciation of Mr. Percy Lewis will be followed by critiques of other workers who have recently come to the front.*

PERCY LEWIS, the only photographer who has taken the medal of the Royal Photographic Society for four years in succession, is a son of Abel Lewis, formerly of Douglas, Isle of Man, and now of Clifton, Bristol. This fact means more to the veterans of the craft than to the men of to-day, for Abel Lewis is one of the men who made history by his sterling work, ten or fifteen years before the salon movement began. Percy Lewis shows in his work something of the tradition of the studio—at least to the extent that he very fully appreciates beauty of technique. He is a good negative-maker and a very good printer in both carbon and platinum, so that his results come as near being "straight prints from untouched negatives" as those of any successful modern exhibitor. In fact, he rather stands between two schools, for while some of the more advanced men allege that his work is purely mechanical, successful "Royalists" have attacked his softer Venetian scenes as representing "Venice in a London fog."

The three pictures selected for reproduction show distinct phases of Mr. Lewis' work, and illustrate his weak as well as his strong points. "A Street Scene, Burano," is a good example of a rather large class of Mr. Lewis' works, in which he is said to have two pictures in one frame. Several of these have been exhibited at the R.P.S., and it is perhaps worth while to inquire how Mr. Lewis steers clear—for he does so—of his danger. In the case in point the picture is saved by the strong mass on the left, by the line of perspective supplied by the tops of the door and windows, and by the soft treatment of the "second picture" on the right. The objects carry the eye surely through the picture, because they are rightly arranged in order of strength of contrast, of actual weight, and of sharpness. The tones are well preserved, and the atmosphere is well rendered.

Such a subject is singularly free from "faking," yet it is one which ninety-nine out of every hundred photographers would fail to render successfully, even though they made the same selection and gave "correct" exposure, "correct" development, and "correct" printing. For no amount of rule and regulation would provide that the "blacks" of the secondary picture on the right should be just a little lighter than those of the main subject on the left, or that the awning which makes such a hard-outlined mass should have just the suggestion of translucency which prevents it "killing" the picture. Those who are familiar with the beautiful work of James A. Sinclair, of which too little has been seen lately, may compare it with these pictures by Mr. Lewis. Each of the men is a good straight technician, with very little "faking," yet Mr. Sinclair tends to use simpler arrangements, stronger masses, and stronger contrasts of light and shade.

The lone fisherman is another subject in which the line between success and failure is difficult to define. Our half-tone is not so good as Mr. Lewis's carbon print, but even our illustration shows how the figure, without being obtrusive, suggests space and atmosphere between the spectator and the

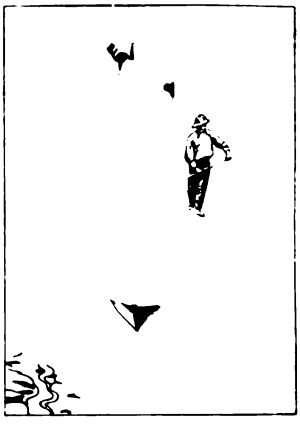
Digitized by Google

buildings beyond the canal. So very little extra hardness in the high-lights would have made the work hopelessly spotty; so very little lowering of those same high-lights would have spoiled the sunshine effect. It is one of the "just so" subjects—"anybody could do it," yet few bodies do.

The placing of the figures, in their relation to the space, and in their

A STREET SCENE IN BURANO. *By Percy Lewis.*

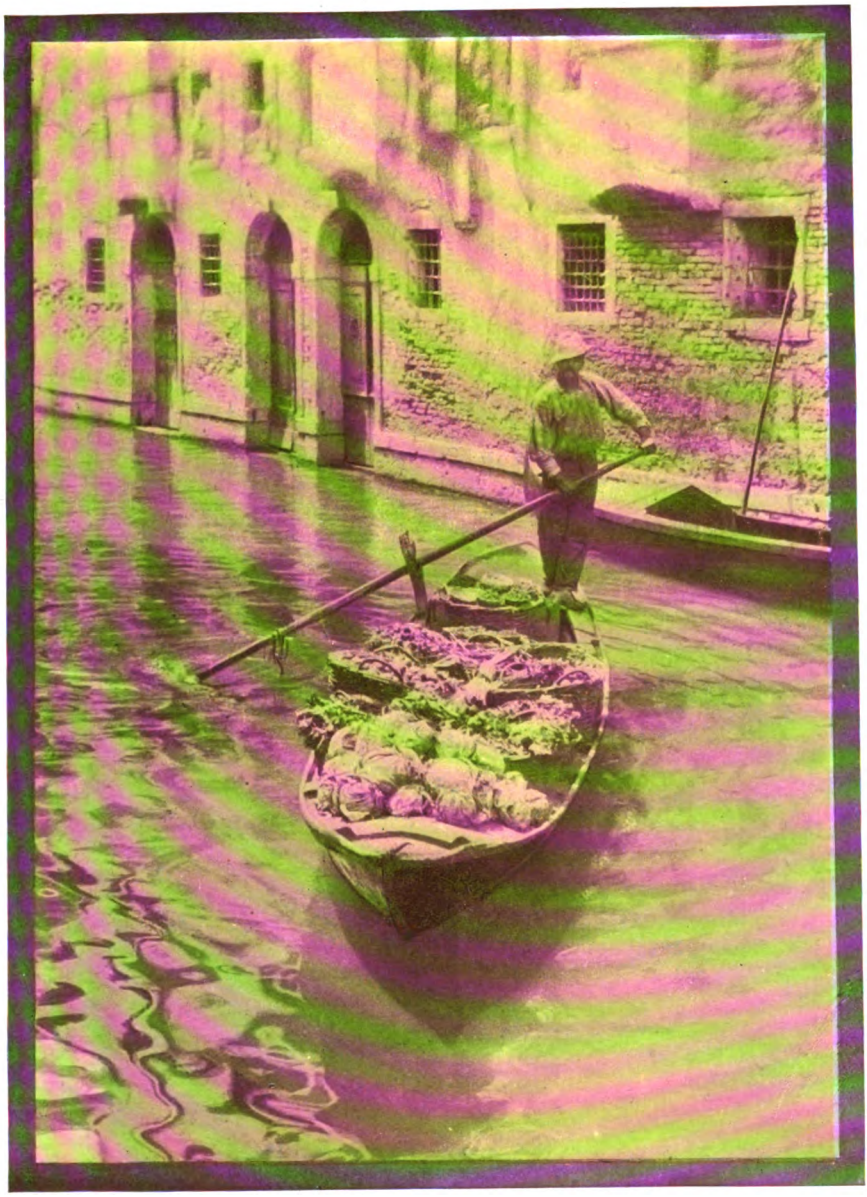
relation to each other, is worth noting in all the pictures reproduced. It is true that in none of these cases did the artist arrange the figures, and that all he could do was to select and wait; but the mere fact of his submitting three prints with such certainty in the treatment of his masses proves his great ability. The fortuitous snapshotter would make thousands of exposures before securing three in which the masses were so simply and strongly placed as in these. "A Fruit Boat" is an especially good example, in which not only the figure itself, but the actual *swing* of the figure, including the boat, is admirably placed. Certain incidental details of the background continue a curve running from near the left lower corner of the picture, through the prow of the boat and through the figure; and this curve surrounding the detailed part of the background, the three doorways and their reflection in the water, has much to do with the success of the picture. This may be taken as an example of Mr. Lewis' narrow-angle subjects, as compared with the width of the Burano scene.



The Scheme of "A Venetian Fruit Boat."

"A Misty Morning, Venice," introduces a little touch or suggestion of the quality given by Turner. While its arrangement of masses and treatment of planes is just as certain as in the other two examples, a touch of mystery

Digitized by Google



A Fruit Boat, Venice.
By Percy Lewis.

Digitized by Google

THE
JOHN CRERAR
LIBRARY

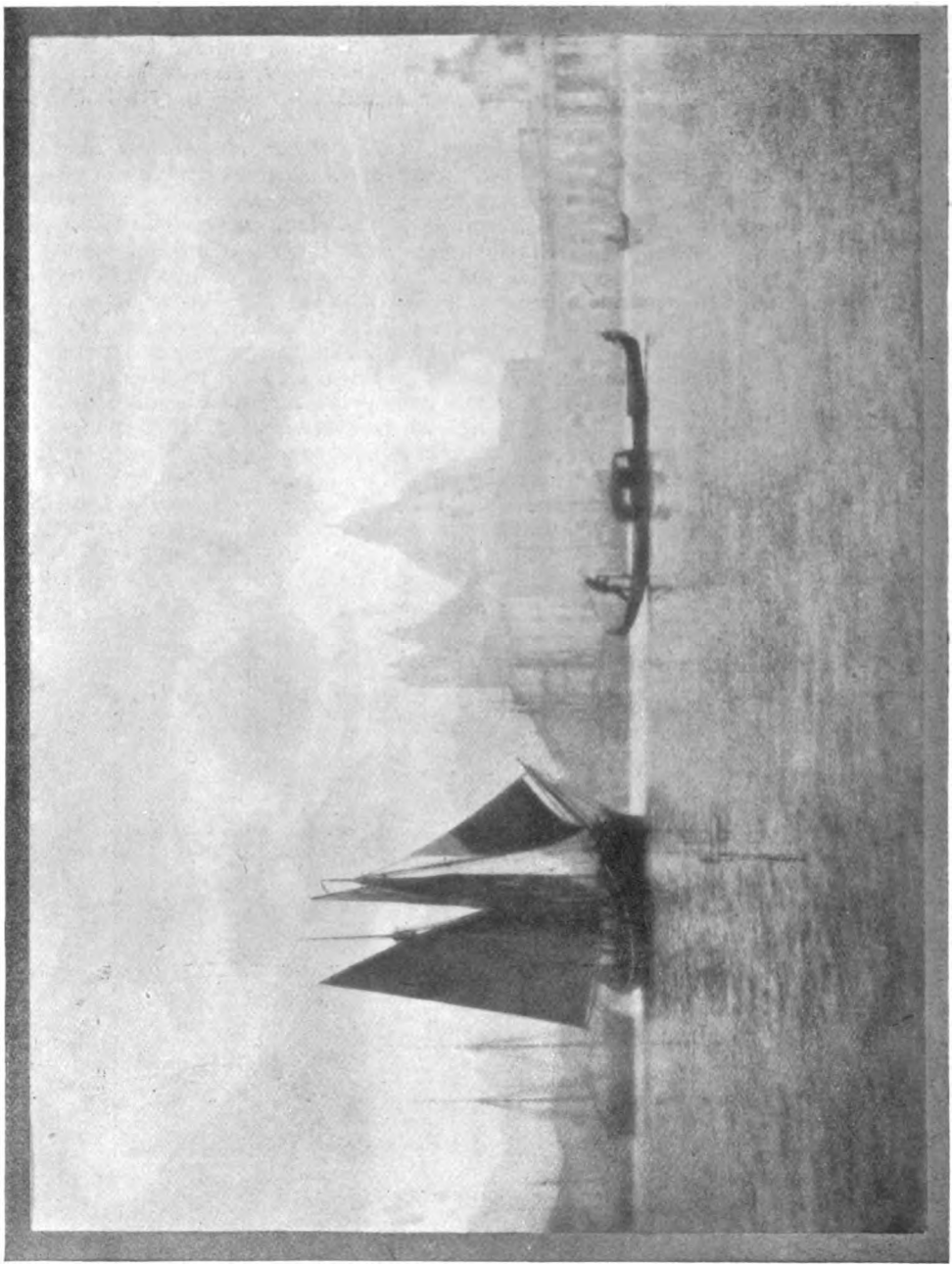
Digitized by Google

and imagination is added. The strong gondola and sail-boat are very daring touches against a background so delicate, but they have just the faint detail in their shadow masses, and the touch of color suggestion that prevent their being black silhouettes. Their necessity becomes apparent if one can imagine the blank uncertainty of the picture if they were removed. On the other hand, imagine the removal of the misty domes beyond, and see how the arrangement at once falls to pieces, and the strong masses become obviously ill-placed for want of the balance supplied by even such a faint object.

The touch of Turner-feeling secured by Mr. Lewis may excuse the repetition of a few words from Ruskin's comparison of the treatment of Venice by Turner and Canaletto respectively, in which, after praising the insight and imagination of Turner, he says of the other painter:—"What more there is in Venice than brick and stone—what there is of mystery and death and memory and beauty, what there is to be learned or lamented, to be loved or wept over, we look for to Canaletto in vain." But we do not look entirely in vain to Percy Lewis, and this is partly because, like Mortimer Menpes, he has tried "to seek out Venice in her humbler and more homely aspects, in out-of-the-way nooks, to go down side canals where old houses and rickety archways harbor the true Venetian, and fascinate the observer who is not keen of smell." And he has seen and recorded something of that glory of Venice of which Miss Menpes says:—"Venice at daybreak is like a phantom scene; everything is of a delicate pearly grey; the distant dome of the Salute is illumined with a faintly rosy glow, and the only spot of positive color is formed by the orange sail of a fishing-boat as it glides noiselessly past."

PATIENCE. *By Percy Lewis.*

Digitized by Google



A MISTY MORNING IN VENICE. *By Percy Lewis.*

Digitized by Google

ADVANCED HAND-CAMERA WORK.

by Walter Kilbey.

The focal-plane shutter in practice, being the second of a series of chapters on the more difficult kinds of hand-camera work. Next month's instalment will deal with sports of various kinds.

EVERY exponent, advocate, or user of the focal-plane shutter will at some time or other have the following question put to him—"Don't you find your focal-plane shutter gives distortion?" Practically, my answer is "No! I do not," and that after continual use with various makes for years. Others may affirm that it does give distorted results, but whether this is so or not, is still a matter of controversy—that is to say, when the shutter is properly used. It is interesting to note, however, that no *practical* focal-plane worker has yet stood up and said *he* has found *his* shutter giving appreciable distortion. In this connection I might just mention that I and a friend are now engaged in experiments by which we hope to prove whether there is or is not distortion, and if there is any, to what extent; for it is generally admitted, I believe, by even those who contend that there is distortion, that it is practically negligible.

A large number of errors made when using the focal-plane shutter are due to want of knowledge. With a little study of the shutter, a great many of the mistakes, especially in the case of unsharp pictures, could be avoided.

The shutter is of the roller-blind pattern, but fitted, as its name implies, immediately in front of the sensitive plate. There is an adjustable slit running the whole *length*, and travelling generally from top to bottom. In some cases it is made to travel along the width of the plate, that is, from side to side. Once the shutter is built in the camera, as it must almost of necessity be in hand cameras, the slit can only travel one of four ways, viz., from top to bottom, bottom to top, left to right, or right to left.*

Now if the image of the subject being photographed is moving very rapidly in the same direction as the slit of the shutter, it is obvious that the slit must be driven much faster than would be necessary if they (the slit and the image) were moving in contrary directions. It is at this juncture that we look for distortion—a slow shutter travelling in the same direction as the image perhaps having a tendency to *draw out* or lengthen the subject, or, on the other hand, a slow shutter travelling in the opposite direction to that of the image, may *compress* or shorten it. Now, as the slit of the focal-plane shutter in a hand camera can only travel in one direction, it may be imagined that the above difficulties will be met with at every turn. This, however, is not so, but one must be on the alert for them, and having observed such, it is the simplest matter in the world to turn your camera in such a way that the direction of the shutter is *contrary to the movement of the image*, or, in other words, in the *same direction as the subject*. In this connection it is very advantageous to have an extra pair of finders fitted; or, if one desires to be economical, a single detachable finder with four bridges—one fitted to each side of the camera—can be made to do all the work.

The foregoing will be as plain as a pikestaff after a little study of the

* When the shutter is fitted with a reversing back the conditions are different.

Digitized by Google

shutter, but to those who are too busy to study, I will here enumerate a few examples, which are the result of my own experience. First and foremost, if the subject is travelling in the same direction as the slit of the shutter, all is well, for it will be remembered that in such a case the image is then travelling in an opposite direction to that of the slit. Knowing the importance of careful attention to this, and sympathising with those who get flurried, and, in a hurry, are likely to drive the shutter the wrong way at the most vital moment, I may be pardoned for dealing with this matter at some length. Presuming our camera is fitted, as most are, with a shutter, the slit of which runs along the length, *i.e.* parallel to the longest edge of the plate, and in making the exposure travels from top to bottom, as most do, we should, to obtain the best results, commit to memory the following rules.

Diving (general), or falling objects.—Camera should be held in a normal position.

High jumping or rising objects.—Camera upside down.

Subjects from right or left, *i.e.* practically across or at right angles to the lens.—Camera should be held vertically.

It will help you considerably if, beside each of your vertical finders (if you have two) you have engraved a little arrow (→ or ←) indicating the direction in which the slit is travelling, when that finder is uppermost, which should also be the direction in which the *subject* is moving. Unless there is some indication of which vertical finder is in use, you would be very apt, if hurried, to use the wrong one, or, in other words, to drive the shutter in the same direction as the *image*. If you fear you may not be safe without something to guide you when using the horizontal finders, there is no reason why you should not scratch an arrow on each side of these also; this time they would be shown thus—↓ or ↑. But as the greater percentage of exposures are made on the normal or landscape way of the plate, there is not likely to be very much chance of mistaking the top of the camera for the bottom.

Before dismissing this subject I would like to point out that if it is desirable to retain clouds in your negative, to be sure that the shutter is travelling from top to bottom. It has been said that clouds are more easily retained with the focal-plane shutter than with a shutter fitted to the lens. One of the chief reasons for this is that a focal-plane shutter travels slower at the commencement of the exposure than it does at the finish. Therefore, if the foreground is receiving exposure while the shutter is overcoming its inertia, it may not be noticeably under-exposed. Then the sky receiving the most rapid portion of the exposure may be more easily retained.

If photographing a "start" or "finish" of a race, or any similar subject—*i.e.* where the competitors or objects are all abreast—camera should be held in the normal position.

There is one point in connection with the photographing of such subjects as the last mentioned, to which the reader's attention is directed. If reference be made to the photogram on page 157, entitled "A Close Finish," it will be obvious that if the shutter had been moving either from right to left, or left to right, the probability is that the result would have been untruthfully rendered, for the slit would have first exposed the competitor on the extreme edge of the plate, and by the time it had got across to the other edge, the man on that side would have made a perceptible move in a forward direction, and in the resulting negative would have been shown in advance of the others, unless the shutter had been driven very fast indeed—probably much faster than would have given sufficient exposure. The matter might, perhaps be made clearer, if the reader will follow the example set forth below.

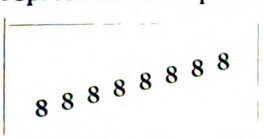
This row of figures, 88888888, we will suppose represents a squad of

Digitized by Google

soldiers advancing in the direction of the arrow ↓ and toward the camera. The shutter is released, and the slit travelling in the direction indicated by the arrow ⟶ first secures the man on the left hand of the line (that is, on our right). Passing along, it takes in the second man, who has in the

FIG. 6.—"A Close Finish." 1-800th sec. At *f*/6, with Goerz-Anschütz focal-plane shutter.

interval advanced some portion of a space, and thus appears in advance of his fellows, though actually they are still abreast. This is continued until the end of the line is reached, when the man on our extreme left might be represented as a pace or more in advance, and the line would then appear—



The last figure is, of course, much exaggerated, but it will, no doubt, serve to show what I mean. If, however, the slit was travelling in the normal direction—that is, from top to bottom—this would not happen, as the squad would then be exposed altogether, first all the feet and legs, then all the arms and bodies, and finally all the heads, so that any distortion there might be, due to the shutter not being driven fast enough, would only result in the whole squad appearing to be slightly leaning forward.

Just another little hint. It has been estimated that the focal-plane shutter admits twice or three times as much light as one fitted adjacent to the lens. Taking this into consideration, it will be obvious that there are very few ordinary subjects that are outside the scope of the shutter under discussion, but should it be that the weather is very dull, and you are unable to secure anything like a correct exposure upon a subject that you wish to represent fairly large, remember that you will secure a better result by getting further away, although, of course, the size of the object will be reduced. There are two reasons for this: (1) The value of the working aperture of the lens will be increased, and, consequently, more light will be admitted; whilst (2) at the same time you can drive your shutter at a lower rate of speed without signs of movements being apparent.*

I know I may be running the risk of being thought presumptuous for drawing attention to these well known facts; but several times I have seen men who are known to be advanced workers, dismiss the idea of exposing upon a subject for fear of under-exposure, which they could have secured a fairly correct exposure of by increasing the distance between the camera and the subject. When serious hand-camera work is undertaken, it must always

* In a subsequent article there will be a reliable table of exposures, from which this will be seen at a glance.

Digitized by Google

be borne in mind that subsequent enlargement will often assist us. A diminutive little group occupying perhaps only a square inch upon a half-plate has often turned out, upon enlargement, to prove a most successful exhibition picture.

Before passing to treat of the difficult subjects let me say a word on where to find them. "Everything comes to him who waits" is a proverb which does not apply to the man who goes to athletic sports in hopes of getting something very striking. One may focus up very carefully on the winning post, and wait all day, but nothing striking will turn up, and presently you will find the light becoming weak and yellow, when the possibility of quick shutter work is out of the question for that day at any rate. It must be strongly urged that one should always endeavor to get the majority of the exposures off in the early part of the day. I know it may be said that the preliminary heats are unimportant, but it will be found that they often yield as good results as the finals, which are rarely run off till late in the evening. If you should have a plate or two to spare, and are an expert in the development of under-exposures, then you might wait for one or two of the final heats. I know it is possible to attend sports meetings for nearly a whole season and get nothing very pleasing for all the trouble and expense. Nevertheless, you are picking up information and experience, and probably making friends among the competitors. Now it is these latter who may help you. You must make love to them, take them into your confidence, and see if you cannot induce a few of them to give you some jumps, sprints, or what not, when they have an afternoon to spare. It is at these times you will undoubtedly be able to *arrange* for the most striking results, and without fear of contradiction I venture to say that with about half a dozen good competent men, one would, under favorable conditions, be able to produce in the course of a very short time some of the finest and most striking results ever shown. So, gentle reader, think out something that you would like done, in case it ever falls to your good fortune to be able to enlist the services of a team of athletes. I will not pretend to advise what would produce the most startling picture—that must be threshed out in your studious moments, bearing in mind that it is "cash for brains" in these days, and if you are in a position to expend the necessary amount of money, the results should well repay you.

Practical methods of athletics, diving and other sports, will come up for treatment in the further articles of this series.

1-700th sec., at *f*/6, with Thornton-Pickard focal-plane shutter: taken at 7 a.m. A plate of medium rapidity was used.

FIG. 7.

Digitized by Google

THE PORTRAIT AND THE STUDIO

V.—MRS. KÄSEBIER AND THE PORTRAITURE OF TEMPERAMENT.

In previous issues:—The work of Fredk. Hollyer, B. J. Falk, Harold Baker, C. H. Braithwaite, W. Scott, C. H. Evans, H. M'Michael. To follow:—H. Walter Barnett, Elliot & Fry, Langfier, Ltd., Martin Jacollette, and others.

Copyright by The Photogram, Ltd., England.
Copyrighted 1904 by Tennant & Ward, New York.

FIG. 1.

MRS. KÄSEBIER believes that the key to success in individual portraiture is love of the work, and absorption in it. While technique is important and should be fully mastered, the greatest thing is to secure the interest of the sitter so that he relaxes that control of the features which is usual in the presence of strangers and allows the feelings full play. To excite as many emotions as possible, to light up the face with interest, humor or surprise, and to subdue it into reflection, should be part of the photographer's art.

Bearing in mind this importance of the psychological or mental part of the sitter, Mrs. Käsebier feels that *likeness* must be the first aim. Let the likeness be as becoming as possible, with display of such dignity, animation, or reflection as is proper to the sitter's character, but let it be at once recognisable by the sitter's friends. After securing likeness, do all that is possible for love of the work itself; to infuse as much art as may be, giving harmony and proper relationship of those lines and masses which make up the expression of the picture, as apart from the expression of the sitter.

As the greatest art is the simplest, it is necessary to avoid all false elements, so that the picture may record the person, and not any mere phase of fashion, or arbitrary arrangement of lines of background and accessory. For this reason, and also because most of her pictures are intended for framing and hanging, Mrs. Käsebier seldom makes anything but large heads, which "carry" well, and hold their position when hung in an ordinary room. Occasionally a figure has peculiar lines of grace, which make it wise to attempt a full-length, but an incidental objection to this is that such a subject requires much consideration and a certain number of background and accessory lines, which are apt to become conventional and to fetter the photographer.

Mrs. Käsebier especially objects to forming an idea beforehand as to how the sitter should be treated, and considers that it is often a disadvantage rather than otherwise for the photographer to be personally acquainted with the sitter. She attempts to keep free from any scheme until she studies the face on the ground glass, which gives her an idea of the shortened scale of tones and of the monocular drawing which result from

Digitized by Google

use of photographic plate and lens. In dealing with the subject reproduced, Mrs. Käsebier began by reflecting that the sitter is a blonde with ruddy cheeks and forehead blanched by the line of the hat in such a way as to throw that part of the head out of key and drawing. The easiest way to avoid this difficulty is to let the sitter wear his hat; so after trying the head without covering in various lightings, she suggested that the hat should be worn, and made Study No. 1. Then, feeling that the use of the hat was simply dodging a difficulty which ought to be grappled with, she had the hat removed, and placed the sitter in a new position with

FIG. 2.

FIG. 3.

diffused light and in front of a tapestry background. Here the hair too nearly blends with the background, and the modelling necessary to give life and to show the form of the head was wanting, hence the lighting was changed so as to fall more strongly upon the face while still keeping the brow and top of the head in shade (Study No. 2).

After two or three further exposures, the sitter began to lose self-consciousness, and the temperament began to reveal itself, because the photographer had worked away from the full-face to the side-face attitude. The full-face (says Mrs. Käsebier) is the attitude a man shows to the world. He purposely keeps it inscrutable, and by long habit prevents it revealing his true character, so that to see the lines of character one must get away from the full face. To record a temperament, one must work for harmony in the lines, hence it is important to secure on the shadow side appropriate lines to balance those of the lighted side of the face. This is found in Study No. 3, where the overcoat comes in usefully to supply a heavy mass and one or two definite lines, and where the little touch of white given by the collar forms a small but unobtrusive high note. In this partly turned position the face and neck begin to reveal the natural lines of the character, and the final example (frontispiece) gives lines which satisfy Mrs. Käsebier that they indicate the real character of the sitter. She says: "I cannot explain in words why this is more satisfactory than some of the others, but it is a real harmony, which pleases one but which cannot be defined (any more than a harmony in music) to those who are not capable of personally appreciating."

Digitized by Google

Mrs. Käsebier's method is to make a considerable number of exposures (generally six or eight), using every effort, by conversation or by keeping the sitter moving, to relax his control of his features, and yet to keep the expression animated and natural. All the studies are made in a direct east light with one large side light and small top light near the northern end, and with an ordinary window near the southern end of the wall. The Studies 1, 2 and 3 were all made principally by the light of the window, while some light from the larger space modified the front lighting. The amount of light is cut down partly by blinds and partly by keeping the sitter at a distance from the lights, so that with a large stop the exposures are usually three to four seconds. Very little retouching is done, and the plates are developed by the stand development method until the image is just nicely apparent. They are then placed in water for some time, after which the development is finished by means of local application with wads of cotton-wool.

The printing is in platinotype, and most of the prints are finished by local treatment with the Stieglitz method of glycerine and mercury, so that the prints generally show variety of local coloring. This is one of the reasons why it is extremely difficult to reproduce at all satisfactorily the most individual work of Mrs. Käsebier.

CORNER OF BISHOP WEST'S CHAPEL, ELY CATHEDRAL. *By H. C. Leat.*
"Detail" Competition, page 167.

A misconception appears to exist in a certain quarter in reference to the beginner's book *Hand-Camera Photography*, a second edition of which has just appeared. Mr. Kilbey, the author, is said by a certain reviewer to give instructions on "how to stalk," which, carried out, would bring photography into discredit. The charge, we submit, would not have been made if the reviewer had read the book. For example, he would have seen on page 65:—"Never under any circumstances ask a person to get out of your way unless you are certain you will not give offence. Rather lose your exposure. Be very careful that no discredit is brought upon your little hand camera and photographers in general." A writer who thus goes out of his way to preach manners is not likely to advocate the ungentlemanly practice of following a person and securing his portrait against his will, as suggested. "Stalking," under that name or not, is part of the practice of every hand-camera worker, and, like everything else, can be abused. But once the subject is conscious of the photographer's presence it is all up with stalking, and no hand-camera man, gentleman or cad, would hope to obtain a portrait of a man who had decided he shouldn't.

A CORRECTION.

MR. MACDONALD writes, in reference to our article on p. 117 of April, that although his light does actually come within 2 ft. 6 in. of the floor, as stated, it is screened, in use, so as to only work within 6 ft. 6 in. or 7 ft. of the floor. Thus it approximates to the ideal conditions mentioned in the same article.

Digitized by Google

FIG. 2.—CLOUDS INSERTED WITH AMMONIUM PERSULPHATE.

See Article by Mr. Lockett on opposite page.

Digitized by Google

CLOUD MAKING WITH PERSULPHATE.

BY A. LOCKETT.

The method of reduction here worked out in practical detail may frequently be used for locally improving a negative in other ways than the introduction of clouds.—EDS.

NOTHING is a greater worry to the conscientiously artistic photographer than cloud printing. He knows only too well the great odds in favor of his going astray and failing to obtain the best possible effect, if even he does not fall into some unperceived trap of false lighting or bad tonality. This trouble may very often be avoided by the simple expedient about to be described. It consists of making our own clouds on the negative itself, by the reducing agency of ammonium persulphate.

It is advisable to obtain a little practice on a few valueless negatives, before we attempt anything serious. The best way to proceed is as follows:—A mirror is laid flat on the table, and a piece of finely-ground glass is procured, the same size as the plate to be treated. We also require about one ounce of a 5 per cent. solution of ammonium persulphate in a small glass measure, and a porcelain dish containing sufficient 10 per cent. sodium sulphite solution to cover the negative. Lastly, we need a springy, rather blunt-pointed sable brush, the size of which depends on the work in hand. For negatives up to half-plate, that known as No. 2 will be found most convenient.

The negative should first be rough-proofed to obtain a practical idea of what is wanted. Some indication of the intended sky may be painted in with water-color on the print, as a guide. We are then ready to commence operations. The ground-glass is placed behind the negative, and the pair are rested on the mirror, supported by the left hand at a convenient angle, as shown in fig. 1, the light being arranged to illuminate the negative by reflection. It may be asked, Why not use a retouching desk? This can certainly be done if preferred, but the way described is the best, for several reasons. When the negative is held in the hand it is more quickly removed, we are better able to prevent the solution spreading, and the manipulations will be found altogether easier than if a desk were used.

We work on the dry negative by choice. There is a good explanation for this. The part which is treated with the persulphate appears in that case to lose density much more than it does in reality, owing to the greater transparency of the wetted gelatine as compared with the dry portion. We are thus allowed a margin of safety, and prevented from making our clouds too emphatic.

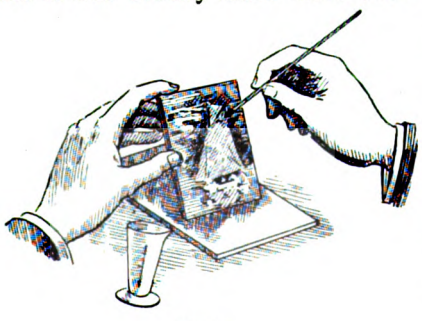


FIG. 1.

The negative being held so that all its details can be seen, the brush is dipped in the persulphate solution and drawn against the side of the measure to remove the excess. The required clouds are then rapidly sketched in, going over each part repeatedly and cautiously. Care should be taken

Digitized by Google

that the brush is not too full, and that none of the solution strays where it is not wanted. The reducing action will commence immediately, and we shall see the clouds gradually coming into existence in response to our strokes. If we notice any edges likely to become too abrupt, they must be softened by rapid application of the nearly dry brush. A certain amount of artistic taste is indispensable, as well as a fair acquaintance with the different forms and peculiarities of clouds, or we shall do more harm than good. The process is, however, surprisingly easy to the photographer of average expertness.

FIG. 3.—Clouds introduced and hard horizon softened.

Directly the clouds appear to have gone far enough, the negative is placed in the sodium sulphite solution, where it is allowed to remain for five minutes. After rinsing under the tap, we then examine it to see if all is satisfactory. Should more work be required, the negative is washed for a few minutes and the surface moisture removed by pressing lightly between clean blotting paper. Further touches can now be given with the brush and persulphate solution, as before, stopping the action without delay by plunging in the sodium sulphite whenever necessary. The negative is, finally, well washed and dried. Any patchiness or unevenness which is then noticed may be readily retouched with pencil, while high-lights can be inserted in a similar manner, if needed.

The illustrations will serve to give some idea of what may be achieved in this direction. They are both straightforward prints, without any sort of control or "dodging," and originally had plain white skies. In the rainy day photogram (fig. 2), the negative was carefully worked with persulphate, until wild, drifting, yet perfectly soft and harmonious clouds were successfully introduced. It required a little patience and several applications, but the result well repays the trouble. The negative of the yacht (fig. 3), in addition to a dead white sky, had a hard, obnoxiously distinct horizon. This was softened down with the persulphate and the clouds blended into it.

We can cordially recommend this method of sky-making to those workers who find themselves at a loss for suitable clouds. It has many possibilities, and would undeniably seem to allow almost unlimited scope for individual treatment, while yet falling strictly into the list of things legitimate and permissible.

Digitized by Google

ARCHITECTURAL DETAIL.

Competition No. 5.

AWARDS.

1st prize (£1, 1s.): "Carbon" (Alfred J. Loughton, Southwell, Notts). 2nd prize (10s. 6d.): "Mancestrian" (James Shaw, Manchester). Honorable mention: "Menevia" (W. Mariott Dodson, Bettws-y-Coed); "Nova" (H. C. Leat, Bristol); "In Dio Spero" (—— ——); "Brunhilde" (Miss Ellis Morgan, Aberystwith); "Guitar" (Miss Constance Fowler Jones, Malton, Yorks); "Cantab" (W. H. Tebbit, Cambridge); "Elchister" (Wm. F. Maitland, Newcastle-on-Tyne); "Monte Christo" (Robert Mackay, Leeds); "Gargoy" (A. W. Sargent, Cardiff); "Hovis" (D. J. Gadsby, Hove); "Darwin" (W. Gundry, jun., Balby, Doncaster); "Miggles" (F. H. Brown, Birmingham).

THE study of architecture by aid of the camera is more general than might be thought, for the entries in this competition outnumbered those in others appealing more generally to photographers. And the technical standard of the work is distinctly higher than the average, making the task of deciding the awards no easy one. The subject is one which we cordially recommend to the photographer anxious to cultivate a sense of the pictorial. For here it is selection and nothing but selection; and selection under conditions which permit the photographer to repeat his work if the first attempt is not to his liking. Landscapes change from week to week, but the architectural worker finds his subject always—lighting excepted—under practically the same conditions. Say some, "But, after all, one simply copies the builder's creation." To which the answer is, "Yes, but only a little bit of it." And it is the practice of searching for that little bit, the training of the eye to find the beautiful amid the commonplace, that provides the best lessons the photographer can have. For after all, what is the art of the landscape worker but selection?—under the more difficult conditions of daily and yearly change.

The first-prize print by Mr. Loughton is as good an example of beautiful detail discovered, recorded and emphasised as one could have.

Mr. Shaw writes in reference to Prior Leschman's Chantry in Hexham Priory:—"The following details, for which I am indebted to Mr. J. P. Gibson, Hexham, will perhaps be of interest to your readers.

"The rude character of the stone work—which is evidently the work of one of the two masons who did work for Leschman during his lifetime — is intensely local in its character, and seems to have got its inspiration (such as it is) from remains of Saxon work probably then existing. Outside is a quaint array of figures: St. George and the Dragon, a bagpiper, a harper, the fox preaching

A CAPITAL. *By Alfred J. Loughton.*
First prize, "Architectural Detail" Competition.

Digitized by Google

LESCHMAN'S CHANTRY, HEXHAM PRIORY. *By James Shaw.*
Second prize, "Architectural Detail" Competition.

to the geese, and an ape, are easily made out. What the others are intended to represent is not so evident." The reproduction is from a platinotype sepia-toned by Inston's formula.

We should like to reproduce much more of the honorably mentioned work than we can find space for, but one or two examples must speak for the rest. "Grand Hotel Entrance, Scarboro'," is noteworthy for its suggestion of opportunities amidst modern architecture. True, we have no great modern architecture of our own, as the streets and churches of any large town too plainly evidence, but that is no reason why the photographer must needs wait for a visit to Lichfield or Ely before getting to work.

Mr. Leat's little study, "Corner detail, Bishop West's Chapel, Ely Cathedral," is an example of selection which we hasten to reproduce as a lesson in the removal of the superfluous and in the making of a composition almost entirely with perpendicular lines. The classical advice of "ancient authorities" that a grey day and cloudy weather are propitious seasons for architectural work is confirmed by the "Exterior of the Doge's Palace, Venice," for the result is more a study of sunshine effects than a rendering of architecture. Nevertheless more advanced architectural workers do not hesitate to call direct sunlight to their aid, though usually for broad effects, not where detail is to be rendered.

THE DOGE'S PALACE, VENICE. *By "In Dio Spero."*

SPECIAL NOTICE is drawn to the supplement "A Venetian Fruit Boat," by Percy Lewis, which is required for the mounting competition No. 8. The picture is to be cut out and mounted in any way the reader sees fit. Saving only that the narrow border may be cut wholly or partly away, the picture is not to be cut or trimmed in any way. The last day for receiving mounted prints is August 1st, but they may be sent at any time between then and now, if marked plainly *Competition* 8. Prints for other competitions should not be enclosed with them.

Results for the "Natural History" competition should reach us June 1st. The competition of the month is "Agriculture"—£1 1s. and 10s. 6d. for the most pictorial rendering of

Digitized by Google

any agricultural operation or process such as sowing, ploughing, harvesting, etc. Last day, July 1st.

The scoring for the series prize of £5 5s. now stands as follows:—W. Foster Brigham, 8; Clarence Ponting, 6; A. J. Loughton, 5; Chas. H. Evans, 4; Jas. Meadmore, 4.

GRAND HOTEL ENTRANCE, SCARBOROUGH.
By W. H. Tebbitt.

NOTES AND REVIEWS.

Circular levels as made for hand cameras come in for some hard words from M. Marulaz in the journal of the Toulouse Photographic Society. With 60 per cent. of the levels on the market, it is said, a central position of the bubble does not mean a level position of the camera. The prevailing defect is insufficient curvature or bad centring of the cover-glass. A level should be tested before use in the following manner:—Place the camera on a surface, such as a marble mantelpiece, previously ascertained, by a delicate straight level, to be strictly horizontal, and lay the level upon it. If the bubble is central, well and good, otherwise the level must be "packed" underneath with slips of paper on screwing it into position.

Softness with Bolting Silk.—Most writers when directing the use of bolting silk for enlargements with diffused definition recommend placing it close in front of the paper. This gives more a screen-like effect on the print than softness, and may do very well for some subjects when you want to break up the shadows a little. To obtain a really soft effect the silk must be placed at a good distance from the paper—the further away the softer the effect. About 8 inches is a good distance to place the silk for softness *minus* screen or pattern on the enlargement. The silk can be purchased from most large dealers. It is best mounted between two cards, each with an opening cut in it of the required size. Cut an opening in one piece of cardboard half an inch smaller than the silk, then paste the silk all round the edges and lay it evenly on the cut and opening. When dry, cut the second cardboard the same size and paste the two of them together, and you will have a good strong frame with the silk tightly stretched between the two ready for use. Enlargements printed through this at a suitable distance have a delicacy and a softening of the shadows into the half-tones that is difficult to get by any other method.—J. PEAT MILLAR.

Two bromide enlargements—both "the largest in the world"—will hang together at the St. Louis Exhibition. That of the Rotary Photographic Co.'s on one single piece of paper we have already mentioned. The other, bigger in area, is shown jointly by the Dr. J. H. Smith Zurich dry-plate factory and Wehrli Bros., photographers, of Zürich. The eight exposures (on an Alpine panorama) were taken on 24 by 18 cm. Smith orthochromatic plates, and separate enlargements made on the same firm's bromide paper: the eight sections being united without sign of a join.

A SNOWY HILLSIDE.
By Will A. Cadby.
To be cut out and mounted as directed by Mr. Evans on page 151.

Digitized by Google

What's What

"The Photographic Times Bulletin" has severed its connection with the Anthony & Scovill Co., and is now issued from 75-77 Eighth Avenue, New York. We note with pleasure the name of Mr. W. I. Lincoln Adams in the editorial triumvirate.

"Photography for All" (London: Iliffe; 1s.).—A sixth edition of this popular elementary manual.

Honor in his own country is accorded to M. Demachy by the translation of his recent articles on gum in *The Photogram* in *La Photographie Française*. The notes thus appear in French for the first time, for M. Demachy writes English which is more than colorlessly correct: it is idiomatic and at times forcible.

"Shining Lights" is the title of a novel which has for photographers the special interest that it is written by Thomas Bedding, editor of *The British Journal of Photography*. We hope to deal with it more fully in our next issue, but meanwhile can strongly advise all photographers who love a good story to buy and read a copy. (London: Strangeways & Sons; 1s. nett).

"Practical Slide-making," by G. T. Harris (London: Iliffe; 1s.).—A useful guide in the straightforward methods and requirements of slide-making. The chief part of the book concerns—as it should—the use of gelatino-bromide plates, but chloride plates, collodio-bromide emulsion, wet collodion, carbon and albumen are also considered. A practical volume, in a strong binding.

Books, etc., Received.—*Revue des Sciences Photographiques* (Paris: Chas. Mendel; 25 fr. per annum). The first issue of a magazine to devote itself exclusively to the scientific side of photography.—*Tidsskrift for Amator Fotographer* (Copenhagen: J. C. Stockholm). A new Danish contemporary, smartly dressed, and, so far as we can judge, deserving the support of amateur workers in Denmark.—*Radium and all About It* (London: Whittaker & Co.; 1s.).—*Aide Mémoire de Photographie*, 1904 (Paris: Gautier Villars; 1 fr. 75). Lists of societies, etc., and a good review of technical progress.—*Optik fur Photographen* (Knapp, Halle; M.4). Not only "optics for photographers," but photographic optics. The author, Dr. Stolze, has done his work very thoroughly.—*The Federation Record* (Organ of the Northumberland and Durham Federation). No. 1, 14 pages, evidencing much work on the part of Editor R. Borrow.—*Practical Enlarging*. By John A. Hodges. Sixth edition (London: Iliffe; 1s.).

The list of dark rooms appearing in this issue will be appropriately followed, in the July number of The Photogram, *by a monograph dealing exclusively with matters of importance to the photographic tourist. The subject is one which seems to have hitherto escaped the attention it deserves, but it will now be dealt with in a very thorough manner.*

TOURIST PHOTOGRAPHY is, in certain respects, a thing apart. There are preparations to be made, precautions to be taken, and certain difficulties, connected with the safe carriage of apparatus and sensitive materials, to be overcome. These will occupy us, and, with them, the devices and wrinkles by which those disasters which befall the tourist in the field can be repaired. A further section is devoted to the ways and means of making the best of various subjects. To some, perhaps, this wisdom of the old hand will be an oft told tale, but we are sure of its importance in the eyes of a large section of our readers.

FIGURES IN LANDSCAPE: "THE PHOTOGRAM" AWARD OFFERED TO PHOTOGRAPHERS WORKING IN PARTIES.

The new award to be offered in "Photogram" competitions, and already offered to those societies who care to arrange a figures-in-landscape competition for their members, needs a few words of explanation. It is not a medal, nor is it a placque, yet it partakes somewhat of the nature of both, for in its entirety it makes a distinctive "spot of light" upon the study wall; while its pendant (detachable) can be worn on the watch-chain or coat-lapel by anyone who would so display a small medallion.

This new award has been prepared by J. A. Restall of Birmingham, and is a fine example of the "French" school of die-sinking, applied according to the best British traditions of medal-striking.

The design is a very old one, going back to the ancient days of Egypt, and is adopted by us for its various significances, some of which are peculiarly appropriate to photography. The chief object is the winged solar disc, representing also a flying scarab (the burying beetle) venerated by the Egyptians as the bringer of light and knowledge (Lucifer). The uræus, or serpent

Digitized by Google

emblem, was not only used with the winged sun, but also in the head-dress of kings (and, modified, in the serpent wand of Æsculapius, the brazen serpent of Moses, and the Caduceus of Mercury), in each case signifying wisdom, and "sovereignty" which comes from wisdom. The scarab in its closed form is fitly combined with its opened idealised form, for this beetle, by nature a burier of small dead creatures, was taken to symbolise industry and fertility, as well as the resurrection of the body after death.

Thus the pendant typifies industry, while the main portion of our award typifies the sun, without which our industry is of little value, and the wisdom which results from industry and competition.

In this year's competitions our readers will have their own choice of cash or the symbolic award; taking for first prize a flying scarab in silver and bronze, with silver pendant; and for second prize an award in bronze. The winner of the year's competition may take instead of five guineas cash a solid silver flying scarab, with pendant of gold. We hope that the keenness of competition will increase until the "Photogram" award becomes one of the most coveted honors obtainable by the photographer.

Beautiful peeresses and actresses are expressly excluded from the latest beauty competition, on the ground that they already enjoy a monopoly of the "beauty pages" in the leading magazines—*Sketch*, *Tatler*, etc. Messrs. Gee & Watson, photo-engravers of St. Bride Street, London, are offering a prize of five guineas (and three guineas to the photographer) for the photographic portrait of the most beautiful woman in the United Kingdom (not titled nor an actress) which they receive before the end of May. The twenty finest are to be reproduced in lavish style.

Catalogues, Price Lists, and Descriptive Pamphlets.—*Boots, Ltd.*, 29 Farringdon Road, London, E.C.—A 90-page list of the photographic goods sold at Messrs. Boots' many branches.

Fuerst Bros., 17 Philpot Lane, London, E.C.—Current list of chemicals, etc.

Altrincham Rubber Co., Altrincham.—Camera accessories, backgrounds, and other specialties.

The Ozotype Co., 1 Weedington Road, Kentish Town, N.W.—Ozotype sensitive paper, pigment, plasters, and other materials.

Lumière N.A. Co.. Ltd., 4 Bloomsbury St., New Oxford St., W.C.—Latest list of plates, films, and papers with "figures, facts, and formulæ" for development, etc.

B. J. Hall & Co., 39 Victoria St., London, S.W.—A list of "blue printers'" requisites. It contains some useful notes on the management of arc lights, and examples of copies by the various ferric and heliographic processes.

Thomas Illingworth & Co., Photo Works, Willesden Junction, N.W.—Price list of the enlargements, trade printing, frames, and carbon tissues, for all of which Messrs. Illingworth are noted. They report an improved and extended plant (to maintain punctual delivery) and special discounts, quoted to professionals on receipt of trade card.

W. Butcher & Sons, Camera House, St. Bride Street, E.C. The latest list of Messrs. Butcher's many varieties of plate and roll film cameras, lenses, and all accessories and materials. The purchaser in doubt ought to get this bulky and handsome volume, which we understand is sent free on application.

Dealers should especially note that Messrs. Butcher supply their special catalogue for dealers' own distribution at less than one half the cost price, complete with dealer's name and address printed on the front cover. Any dealer who has not already studied this offer with the catalogue before him ought to do so now.

Thornton-Pickard Manufacturing Co., Altrincham.—The 1904 Catalogue, detailing a number of new apparatus and accessories. The following are especially worth notice:—*New Patent Disappearing Cord* (page 6).—An addition to the well known time and instantaneous shutter. The cord runs back into the shutter box after setting either for focussing or exposure, thus obviating all risk of becoming entangled with the ball and tube, or shutter mechanism, when operating in a high wind. *Panoptic Shutter* (page 12).—A new "between lens" shutter, giving a great range of reliable exposures. 70s. *Imperial Triple Extension Outfit, half-plate size* (page 37).—A thoroughly reliable and well-constructed outfit, suitable for general all-round work, copying, enlarging, and telephotography; of unique and original design, good quality, and fine finish. We have used and recommended this outfit, and have nothing but praise for it. It is remarkable value. *Brassbound Imperial Triple Extension* (page 38).—An outfit of similar design to the above, but with camera and slides brassbound throughout, and with time exposure valve fitted to the shutter. For withstanding hard usage and severe climatic conditions. *Graphic Camera* (page 49).—A new quarter-plate hand camera, fitted with a focal-plane shutter working up to $\frac{1}{1000}$th of a second for instantaneous, and also giving time exposures. *Royal Ruby Cameras, Double and Triple Extension Models* (pages 26–33).—In these cameras all adjustments are operated and controlled by mechanical means.

The above are the chief new items in Messrs. Thornton-Pickard's list. On other pages are hints, drawings, and information which render the catalogue a distinct help to those about to select a camera. The list is offered free to readers of *The Photogram*.

The Antinous Release (W. Watson & Sons) is now supplied in a form adapted for use with the shutter of Beck's F.O.P. cameras and other Frena cameras. Also for the Vril focal-plane camera. The release costs 4s. A pattern to fit the Zeiss-Linhof shutter is sold at 2s. 6d.

"Royal Standard" Plates.—Messrs. Cadett & Neall send us a supply of two new brands of plates which they are issuing under this name, and which we shall report upon, after trying them, in our next issue. Meanwhile, here is Messrs. Cadett & Neall's claim for the new plates as stated in a pamphlet, which can be had for the asking from Ashtead, Surrey:—

"In the past few years the rivalry among dry plate makers has been for speed. This feature has been so absorbing to the maker, and so much advertised to the consumer, that both photographers and manufacturers have been to a large extent misled. Speed secured at the sacrifice of the many other essential qualities to a good negative is a step backward instead of forward on the part of the manufacturer, and leads to many failures and disappointments to the photographer.

"For instance, latitude in exposure is, to indoor and outdoor workers alike, a most important feature in a dry plate; but if, to secure a result, the margin of under and over-exposure within which good printing quality can still be secured is reduced to narrow limits, many failures are bound to follow, even with the most expert and conscientious photographer. Density, freedom from fog, fineness of grain, gradation, uniformity of batches, are all of the greatest importance. The ideal plate, therefore, is the fast plate which retains these most essential qualities,

Digitized by Google

and here is where Cadett & Neall, Ltd., base their claims of superiority for their new production, the 'Royal Standard' plate, over any other brand heretofore made by either themselves or other British manufacturers."

The new plates will be made in "Rapid" and "Extra Rapid," and will be sold at 1s. per dozen quarter-plates.

A Unique Offer.—The Brooks-Watson Daylight Camera Co. offers a packet of Rajar films to any "Rajar" worker who demonstrates the apparatus to ten persons.

Continental Excursions.—Mr. W. F. Slater, of 68 Longhurst Road, Lee, S.E., sends prospectuses of excursions to Zeeland, South Holland, and the Zuyder Zee.

A Negative Ink is issued by Mr. Tylar of 41 High Street, Aston, Birmingham. It writes freely on gelatine or celluloid, or even on plain glass. Price 1s. 2d. post free, or from any dealer.

"The Imperial Handbook," 1904.—A valuable addition to any amateur's library, and sent free by the Imperial Dry Plate Co., Cricklewood. Articles on how plates are made: how to gauge exposures in enlarging; gaslight printing; how to focus; making up developers.

Dagas is Messrs. Cadett & Neall's new gaslight paper, made in matt, medium matt, and glossy. The paper is exposed and developed in the usual way, and gives fine black prints. This latter, the makers point out, is a special feature of the emulsion; it is difficult to obtain unpleasant greenish tones. Certainly the sample fully bears out this claim.

Cadett Post Cards. Dagas is issued as a sensitised post card in smooth matt surface only. Messrs. Cadett & Neall now supply also a self-toning and a bromide post card, recommending for the latter the toning formula of theirs which we have already published in *Figures, Facts and Formulæ*.

Apek Cameras.—In notifying us that his quarter-plate "Apek" stand camera is now issued with a swing front, Mr. Wilfred Emery of High Road, Cricklewood, N.W., reminds us of the remarkable value offered in the 60s. and 70s. half-plate sets supplied by him under this name. The 1904 list before us specifies the movements of these cameras in detail.

Tri-Color Photography.—Those who may wish to make trial of photography in natural colors at small expense would do well to get the catalogue of Davidsons Patents Co., 20 Middle Street, Brighton. This company has charge of the Jumeaux-Davidson process, the special feature of which is the simple form taken by the apparatus. The "tri-color carrier" can be fitted to an ordinary half-plate camera and the three negatives are taken at one exposure.

Thornton-Pickard Shutters can now be fitted with a new device whereby the winding-cord is drawn back into the shutter after the latter has been set. Hence no cord to dangle and perchance be caught in the shutter mechanism at the critical moment. The Thornton-Pickard Company name the improvement the "Disappearing Cord"; they fit it to new shutters for 3s. 6d.; to old ones for 5s. The device is a thoroughly sensible one, which we have already had occasion to appreciate.

"The Photographic Dealer's Annual" (Marshall, Brookes & Chalkely, Ltd.) appears for the fifth time, and as heretofore includes a carefully compiled list of trade addresses and trade names with makers' formulæ, and much other useful information. Several articles relieve these dry technicalities, one on "Testing Lenses," by Dr. S. D. Chalmers, and another on the "Care of Photographic Stock," touching subjects of importance to the trade. The Dealer's Annual is issued, to the trade only, at the price of 1s.

Keep-Sweet Paste is a new mountant of Mr. Tylar's which we have had in use long enough to confirm the fitness of its name. Moreover, it sticks firmly. In bottles, 3d., 6d. and 1s.; in large jars, for professionals, 5s. Sample bottle post free 5d.

The "mounting stump" which Mr. Tylar likewise offers from 41 High Street, Aston, Birmingham, is a new and sensible appliance, aiding an even coat of paste. Let those who have mounting troubles get one and be happy. 4d., 6d. and 8d. Sample post free 5d.

Photolinol.—Since our notice last month of this new material which Messrs. Griffin are placing on the photographic market, we have visited the headquarters of Photolinol at 154 Holland Park Avenue, London, W., where we were shown some of the many applications of the material in decoration, advertisement and scenic effects. Messrs. Photolinol, Ltd., are engaged in creating a new branch of photographic industry, and what they had to show as the result of hand coloring on a translucent photographic base went far to demonstrate the scope of the new process.

A Notable List.—Messrs. Dawbarn & Ward's revised list of books and periodicals dealing with photography and other technical subjects is now issued arranged alphabetically, according to subject. It thus enables anyone interested in a given branch to turn up the available literature. Though but sixteen pages long, the list is a remarkably complete one, and probably few photographers could study it without discovering some volume of use to themselves of which they had not previously heard. Messrs. Dawbarn & Ward send the list from 6 Farringdon Avenue, E.C., on receipt of a post card.

The 1904 Alpha of Messrs. W. Watson & Sons is on the lines of the previous patterns of this popular folding camera, but is brought quite up to date by being built with a focal plane shutter and an extension long enough to permit the use of the single components of its Holostigmat. Thus in the quarter-plate size the user can choose between foci of 4½, 7½, and 8½ in. Moreover, the camera is now issued in black leather and aluminium fittings, and hence is ornate in appearance, without shining in the sun like an eastern jewel, as is the way of many another instrument of this pattern. The Alpha, thus rejuvenated, costs £13 5s. in quarter-plate, £15 5s. in 5×4.

Cleron Roll Film.—A little while ago we reviewed the Cleron cut films of the Brooks-Watson Daylight Camera Co., Great Horner Street, Liverpool. Now we are able to report on the Cleron roll film, which apparently owes its good qualities to the same parent emulsion. The film is exceedingly rapid, and abnormal in the clearness and cleanness with which it behaves itself in development—two virtues which, by themselves, ought to win to the film a wide circle of support. In addition, the way in which the film lies flat in the solutions compels a special mention, and there is certainly good reason for the firm's description of it as "distinctive." In price it is hopelessly devoid of all special claims to notice—3s. per dozen quarter-plate exposures.

Lustra Bromide.—A new bromide paper of this name reaches us from Messrs. Elliott & Sons, Ltd., of Barnet, Herts. It is difficult for us to adequately review it, for we cannot set down in cold print the happy combinations of qualities which entitle "Lustra" to be called a bromide paper *de luxe*. It is a rapid paper with a peculiarly delicate and pleasing surface. It yields prints of brilliant whites and rich blacks. There were good Barnet bromide papers before Lustra, and we could name expert printers in bromide who will have none but Messrs. Elliott's manufacture. But, as Messrs. Elliott say, "Lustra" is "something new and something very good." That is a statement we can heartily endorse, and doubtless many of our readers will do so too.

Glazing and Matting Prints.—The Altrincham Rubber Co. have done well in providing the photographer with an easy way out of squeegeeing and stripping difficulties. In their new "squeegeeing pad" the surface which gives the matt or glossy surface to the prints is kept clean, when not in use, by the rubber covers: which covers protect the print during squeegeeing, and serve also to suspend the pad when it is hung up to dry. The pad is obtainable either matt or glossy, and both sides can be used. The plan is one which we have found extremely handy, and fortunately the pads are not expensive—2s. 6d. in 10×8 size, taking 8 quarter-plates; 1s. 6d. in half-plate size. The dull surface is a particularly fine matt. Squeegees to use with the pads are a specialty of the Company's.

The Goerz-Anschütz Folding Camera appears this season with important improvements. The shutter contains two apertures. The narrower is the original adjustable slit for exposures from $\frac{1}{5}$ to $\frac{1}{1000}$ of a second. The second aperture is the full width of the plate, and thus permits time exposures, and enables the view to be focussed on the ground-glass. In addition, this wider slit permits of slower exposures than $\frac{1}{5}$: it works in connection with an automatic release which accurately times the following series of exposures: ¼, ½, 1, 2, 3, 4 and 5 secs. The two slits thus provide for the longest and shortest of exposures, and one or the other is brought into action very readily and in such a way that it is difficult to use the narrower instead of the wider, and *vice versâ*. In other respects the camera remains the same, and so does its price, except when the instrument is purchased without a lens: an additional £1, 5s. is then charged for the new model. These new features are introduced into all patterns—stereoscopic, etc.—of the Goerz-Anschütz camera.

As we have already notified, a telephoto attachment is now supplied by Messrs. Goerz for the camera. It consists of a pair of rigid aluminium tubes sliding one within the other. The attachment is marked with the positions for infinity focus when working with and without the standard rear extension supplied for Goerz-Anschütz cameras. With

Digitized by Google

this extension, the telephoto system will give a magnification of about six diameters: without it, about three diameters: these figures depending on the focal length of the positive lens. The new accessory is light, though strongly made, and converts this all-convenient folding-camera into a veritable universal instrument for use at short or long range. Messrs. Goerz send particulars from their London house, 4–5 Holborn Circus, E.C.

With a Kodak on Lake Baikal.—The photographic experiences of Prince Khilkoff, Russian Minister of Ways and Communications, has supplied a strong and conspicuous argument for the Kodak developing machine. His Excellency used a folding pocket Kodak day by day on Lake Baikal as the work of transmitting the troops to the East proceeded, developing the negatives on the spot in the machine. The negatives were printed by the Kodak staff in St. Petersburg, and within a few hours of their arrival the pictorial record was in the hands of the Tsar.

The Warwick "Special Rapid" Plate.—A new issue from the Warwick Dry Plate Co. is a plate of the very greatest rapidity, named the "Special Rapid." The plate is marked 128 Wynne by the makers, a speed which places it with the most rapid brands obtainable commercially. Comparative tests made in the hand camera, with exposures based on the above figure, have proved the fairness of the claim. Such a speed means that the hand-camera worker can stop down his lens to *f*/16 or *f*/22 and still make rapid exposures, while the photographer of sports and trotting-horses can speed up his focal plane shutter to $\frac{1}{500}$ or $\frac{1}{1000}$ and obtain negatives of good detail and gradation. Although so rapid the Warwick emulsion is without propensity to fog, and yields negatives of fine grain free from tendency to show halation under ordinary conditions.

A New P.O.P. for Flat Negatives.—The lot of the photographic tyro is rendered happier by a new P.O.P. issued as "Leto Extra Hard." Ordinary P.O.P. is the saviour of many a wretched negative, but the new brand of paper seeks to render serviceable the very dregs of clichés: to extract presentable prints from them; to avert the doom of the waste-box which threatens them, and which may yet overtake them, if their possessors know not of "Leto Extra Hard." The new paper bears an emulsion adjusted to give a super-normal contrast. In other respects it is like any other P.O.P., and is toned and fixed in the usual way; either separate baths or the combined bath may be employed. We have no doubt that the new paper will be widely used. It is issued in the regular sizes, and as post cards in two grades—matt white and glossy mauve. The price is on the basis of twenty quarter-plate pieces per 1s. packet, and the makers are the Leto Photo-Materials Company, 9 Rangoon Street, London, E.C.

The Argus Reflex Camera, just marketed by Messrs. W. Watson & Sons, 313 High Holborn, London, W.C., is remarkably small, measuring only 6×6×4 in., and its price, for a camera of the reflector type, is proportional. Complete, with three double slides and Holostigmat (*f*/6), it costs £14 14s. in quarter-plate size, or £15 10s. in 5×4. The shutter is the focal plane of external adjustment, of which we have spoken before as being fitted to Messrs. Watson's Vril folding camera, and possesses a range of speeds from $\frac{1}{4}$ to $\frac{1}{1000}$ of a second. Adjustment is made with the mirror in such a way that when time-exposures are being given the reflex finder and focussing are still available, a great advantage when using the camera on a stand. The camera is of single-extension pattern, but can be fitted with a telephoto attachment, to double the size of image, at an extra cost of £2 5s. The reflector principle of full size finder is one which is coming very rapidly to the front, and it is satisfactory to find a camera of this pattern among those of Messrs. Watson, whose name is a sufficient guarantee of high-class manufacture.

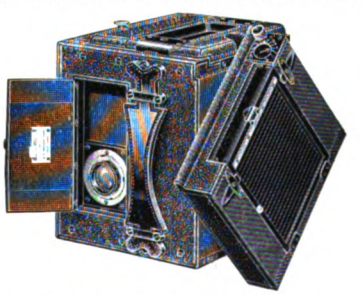
"Roto" is the new roll film of the Rotary Photographic Co., Ltd., 14 New Union Street, Moorfields, E.C. In placing this new addition to their list of manufactures on the market, the company, we are glad to find, recognise the advantage of keeping the film tightly sealed before exposure. They issue each spool in a well fitting tin case, thus safeguarding its keeping qualities. Experiments made at short notice cannot properly confirm the direct advantage of this precaution, but it is one supported by the great bulk of general experience, particularly that of tourists in tropical climates. The tin case should not be thrown away when the spool is transferred to the camera, for after exposure it is still more important to protect it from air and damp; a broad rubber band should be used to close the cover more completely. As regards speed and cleanness of working, the new film is of high quality. Users of Rotograph or Rotox paper will not be disappointed in it, and perhaps that is as fitting a commendation as can be given. The price of Roto is 3s. per twelve quarter-plate exposures.

A Superb Reflex Camera. — Messrs. Newman & Guardia, 90 and 92 Shaftesbury Avenue, W.C., have now a new pattern of the reflector camera of theirs in regard to which we were bound to speak in terms of enthusiastic praise about a year ago. The new instrument, known as the "square reflector," is an advance even on its predecessor in several important particulars, viz.:—

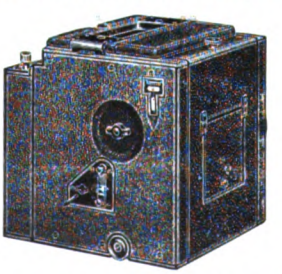
Takes vertical and horizontal pictures.
Accommodates lenses of normal focus.
Accommodates lenses of large diameter like the Planar.
Instant change from short to long extension.
Reduced bulk—to 6½×6×6¾ on quarter-plate size.

To amplify these salient points of the apparatus would occupy several pages of this journal, and then would do the camera injustice, because it would represent it as complicated. And that is what the instrument is not. Despite the range of movements at the disposal of the user—a range excelled by no other camera on the market—the actual manipulationof the "Reflector"

is such that the man who can handle a guinea camera can work Messrs. Newman & Guardia's. This is not "wrote sarcastic" in view of the fact that certain guinea instruments



defy human ingenuity to make them move as they should, but we draw the comparison lest some may think that a camera of this price (£35) must be a maze of mechanisms



fit only for the expert. £35 is what Messrs. Newman & Guardia charge for it, or £27 without the Zeiss double Protar of 5½ in. focus. What that money buys the firm's

Digitized by Google

technical specification makes clear, and to it we may refer the prospective purchaser. We will add one other item to the list of parts, and that is the guarantee in the name "N. & G." of perfect workmanship and accuracy of movement. The reader need not take the word of ourselves in regard to this. It so happens that we can quote an impartial authority, Dr. Hans Lehmann, who, writing in the *Journal für Instrumentkunde*, places a shutter of Messrs. Newman & Guardia at the head of a list which includes leading makers in all parts of the world. The test was made on a shutter which had been in use for two years, and hence is a certificate, not only of accurate adjustment, but of the still more important quality, thorough workmanship.

The Judges in the Kodak great competition (last day, June 30th) are Sir Wm. Abney, J. Craig Annan, and Frank M. Sutcliffe.

Ensign Film Competition.—Messrs. Houghton write that only mounted prints need be sent; the film negatives may be demanded from prize winners.

The "Camera House Journal" is Messrs. Butcher's "monthly message" to the photographic dealer. Message No. 1 is in a cheerful and confident key. The new journal is sent free to every *bona fide* who applies for it.

Eastman Kodak Co.—The net profits for the year ending December 31, 1903, are £603,235, 5s. 10d. Six per cent. is paid on the preference and 10 per cent. on the common stock. A surplus of £222,891 is carried forward. Attention is called to the fact that the company is paying dividends upon a large amount of capital which has been paid in by shareholders, but has not yet been invested; the total of railway bonds, call loans and cash, less current liabilities, amounting to £926,541. When this surplus capital is fully employed, the total profits should be very considerably increased.

A Studio Camera de Luxe is a specialty of Chas. Zimmermann & Co., 9-10 St. Mary-at-Hill, E.C. The elegant appearance of the instrument is not its only recommendation; old Spanish mahogany and lacquered brass are used throughout, so that the instrument, with its tripod artistically carved and panelled, is a handsome piece of furniture. But as a practical tool for the photographer it is no less meritorious. Almost every movement is by rack; the extension, in the 12 × 10 size, is over 4 ft., and the repeating back takes two repeating slides for full sizes and all smaller sizes. Concealed in the mechanism is a musical box for the purpose of calling up a "pleased expression" upon the infant countenance. The price of the whole outfit, delivered free, is £44. A similar instrument, of less ornate finish, is sold at £27.

Messrs. Zimmerman sell an altogether cheaper form of studio camera of square build suitable not only for portraiture, but for copying, enlarging and outdoor work near at hand. The prices run from £6 7s. 6d., and the series is one which anyone commencing in a small way would do well to note.

Focal-Plane Cameras.—Messrs. Chas. Zimmerman & Co., of 9 and 10 St. Mary-at-Hill, have other claims to the gratitude of photographers than that they are the purveyers of Rodinal. They are supplying a series of focal-plane cameras in which are certain patterns so moderately priced as to bring this type of shutter within the reach of all. We need not say why the focal plane is better than any other shutter for slow work as well as fast. Mr. Kilbey is doing this on another page. Sufficient that the Ernemann cameras, as Messrs. Zimmermann's instruments are named, embody the shutter in convenient and reliable form. Model B is a folding camera which pulls out to a fixed extension on struts and is focussed by the special mount of the lens. It has a rising front both ways of the plate, aplanat lens working at *f*/8, and two bushes for affixing to tripod. Complete with three double dark slides it costs £4 4s. The shutter gives exposures from $\frac{1}{25}$ to $\frac{1}{250}$ of a second: the adjustment of the width of the slit being very simply made with the focussing screen thrown back.

Model C is the same price as B, and has a similar shutter, but is of the American "box form folding" or hand-stand pattern. Focussing is here done by rack, and the camera stands firm on a table.

The Model A is a more elaborate pattern in many ways. Its finish throughout is dull polished ebony, handsome but inconspicuous. It extends on struts and is very rigid when in use. The shutter is the Ernemann focal-plane, adjusted entirely from the outside, from $\frac{1}{10}$ second to the most rapid exposure. The shortest—narrowest slit and the spring at high tension—is claimed by Messrs. Zimmermann to be $\frac{1}{1000}$th of a second. Without a lens the camera costs £4 15s. complete with three double slides: with Ernemann anastigmat (*f*/6·8), £9 9s.; with Goerz, Series III., £11. A special booklet of the cameras contains some useful hints on focal-plane photography.

New Printing Papers.—Messrs. the Bayer Co. of Edinol fame are now introducing several new printing papers to photographers' notice. Pan, Tula, St. Luke's, and Aristo are their euphonious names. Their qualities are doubtless known to many of our readers, as we have been familiar with them for some years past, and have described them more than once in these columns. They were then made by Liesegang of Düsseldorf, from whom apparently the Bayer Co. have acquired the rights of manufacture. The transference is a matter for congratulation, as we know a demand, which was not supplied, existed for the papers, and they will now be actively marketed by the Bayer Co. To concisely describe the papers:—

Pan.—For black, brown, reddish brown, red and purple tones by direct development. Exposure, a few seconds to daylight, incandescent gas, or magnesium. Developed in weak artificial light. Seven grades altogether, from glossy to a charming "rough matt cream antique."

Tula.—A gaslight paper for cold black platinum-like tones. Specially hardened surface withstanding summer temperatures (even hot water), and not easily damaged in handling. Matt, rough and glossy—thick and thin. A rather slow paper for daylight or magnesium exposures.

St. Luke's.—A gaslight paper for warm and cold tones. Four times as rapid as Tula; for ordinary gaslight exposures.

Aristo—P.O.P. An exquisite gelatine printing-out paper. Tones well in the acetate bath (we are glad to see Messrs. Bayer Co. recommend the fused acetate with its freedom from tarry impurities) or in the Bayer tone fixing bath.

The new papers have distinctive qualities, Pan and Tula particularly. The former should find instant favor with those who must have warm tones, and now follow the devious windings of "after-processes" to get them. The Elberfeld firm likewise introduces Bayer's bromide paper, a brand of gelatino-bromide which we find to be excellent in the way it gives a clear pure black with brilliant high-lights. Any developer can be used for it, but the company supply and recommend a special preparation of edinol which has only to be diluted with ten times its bulk of water to be ready for use. This for black tones; for warm colors, the solution is restrained with acetone sulphite. The developer in either form works well in our hands with both bromide and gaslight papers.

We need only add that all the above papers are obtainable in the indispensable post card size; that the various brands can be obtained through any dealer, and that in the event of difficulty, the Bayer Co. will send samples from 10 Booth Street, Mosley Street, Manchester.

New Businesses, Changes of Address, etc.—*New Photographic Stores.*—Ernest Cove, 57 Hornsey Road, Holloway, N.

S. Briggs, 165 Whitecross Street, Old Street, E.C.

Parker, Ltd., 189 Finchley Road, South Hampstead, N.W.

Messrs. Sanders & Crowhurst have purchased photo-material and other business carried on by Williamson & Co. at 55 Western Road, Hove. Messrs. Williamson continue their cinematograph film manufacture at Wilbury Road, Hove.

PRINCIPAL CONTENTS.

Mounting the Exhibition Print. By Fredk. H. Evans.
Critical Appreciations.
Advanced Hand-Camera Work. By Walter Kilbey.
The Portrait and the Studio.—V. Mrs. Käsebier and the Portraiture of Temperament.
Cloud Making with Persulphate.
Architectural Detail.—Competition No. 5.
What's What.
Trade.

The Process Photogram

contains the whole of *The Photogram plus* the following articles and notes relating to photo-mechanical processes:—

Practice and Theory of Half-tone Etching. By E. Klimsch.
Collodion Troubles.
Process at the Printing Exhibition.
Standardising Light-Filter Formulæ.
Intensifying Collodion and Gelatine Negatives.
Current Topics.

Digitized by Google

THE PHOTOGRAM

VOL. XI. JULY, 1904. No. 127.

Editors:
H. SNOWDEN WARD.
CATHARINE WEED WARD.
GEORGE E. BROWN, F.I.C.

COPYRIGHT.—*This Magazine as a whole, with its contents, both literary and pictorial, is copyright; and the copyright is registered in Great Britain and the countries forming the Copyright Convention. Our contemporaries are very welcome to quote from our pages (with acknowledgment), but we propose to protect ourselves and our advertisers against piracy.*

PHOTOGRAPHY ON TOUR.

THE rapidity with which photography has gained a leading place among our national pastimes is patent to all. For lo! the camera is everywhere. Along the Thames from Hammersmith to Oxford, on cliffs and piers and esplanades, on moors and river banks, in woods and dark cathedrals, you see it the invariable companion of the seeker after health and pleasure. On longer journeys by train *de luxe* or ocean liner, you observe it in the hands of all sorts and conditions of travellers. Age and circumstance have little to do with its adoption—only the intensely human desire to pourtray things seen—a desire that inspired the ancient cave dwellers to make their crude sketches even as it impels the modern tourist to put a camera in his portmanteau. Although the camera plays this large part in the world's holiday-making, the endless facts, methods, and precautions which need to be impressed upon the photographic traveller have never yet been collected in convenient form. Even now that task has yet to be done with all the fulness which the subject deserves, but in the present issue "Photography on Tour" is treated in practical fashion by a writer who is fortunate in adding to a wide experience of his own a knowledge of the methods of other photographers.

The subject-matter is arranged roughly under the following heads:—

BEFORE DEPARTURE — LENSES, CAMERA, AND ACCESSORIES.
PACKING AND CARRYING APPARATUS AND MATERIALS.
CHANGING AND DEVELOPING *en route*.
RE-PACKING EXPOSED PLATES AND FILMS.
ON THE CONTINENT—MATERIALS AND VOCABULARY.
LIABILITIES AND PRIVILEGES.
EXPOSURE MATTERS.

The last item alone deserves a volume to itself, and much practical instruction in this direction has had to be omitted for lack of space. But in the reprint of the tourist matter, in pocket form, this additional portion is included. (See notice below.)

PHOTOGRAPHY ON TOUR.

The pages dealing with the various practical questions of tourist photography in the present issue of The Photogram *are republished with extensive additions in the form of a volume for the pocket measuring* $5 \times 3\frac{1}{4}$ *ins. The title is "Photography on Tour." The little book is stoutly bound in cloth, and is obtainable from photographic dealers and booksellers for one shilling net; or from the publishers of* The Photogram, *Messrs. Dawbarn & Ward, Ltd., 6 Farringdon Avenue, London, for one shilling and twopence.*

Digitized by Google

PHOTOGRAPHY ON TOUR.

BEFORE DEPARTURE—LENSES, CAMERA, AND ACCESSORIES.

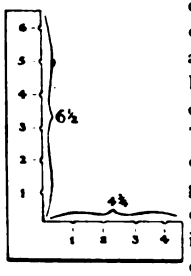
LENSES.—The more the better, so long as the outfit does not include practical duplicates. That is to say, there is nothing to be gained by carrying a single lens of 10 inches focal length when the single combination of your 5-inch anastigmat or rectilinear is available. The tourist may consider himself well equipped if he has:—

One anastigmat or R.R. (f/6 or f/8) of focal length equal to the diameter of his plate—8 *inches on half plates, and so on. For general work.*

One wide angle lens, i.e. *R.R., or anastigmat of focal length, rather less than two-thirds the diameter of the plate*, i.e. 5 *inches on a half-plate.*

One single lens of focal length about two inches less than the total extension of the camera. If the single component of the anastigmat will give this, all the better.

COMPOSING IN THE CAMERA.—Much time and unscrewing of lenses may be saved if the general worker forms a habit of first examining every view as it is shown by one of his wide-angle lenses; composing the picture by means of two L-squares, as illustrated, and deciding upon the lens to be used for the picture by means of a table prepared as below. The L-squares can be shifted over each other on the ground-glass, until they enclose the part of the picture which is really important; then, by reading off this size of the space they enclose, it will be easy to see from the table which lens is required.



To prepare a table, note that the proportion of picture given by a wide angle lens A, which will be included by a narrower angle lens B, is inversely proportionate to their focal lengths. Thus supposing we examine our picture in a half-plate camera, with a lens 5-inch equivalent focus, the portion of that picture which will be included in the half-plate when we use a lens of 10-inch focus is $3\frac{1}{4} \times 2\frac{3}{8}$. Bearing this in mind, each reader should be able to make for himself a simple table. Take an actual case, in which an amateur has two non-symmetrical anastigmats, A and B, of 5 inches and $6\frac{1}{2}$ inches and a symmetrical of 9 inches focus.

5 in. = A, covers on the half plate screen $6\frac{1}{2} \times 4\frac{3}{4}$
$6\frac{1}{2}$ in. = B, covers, of the pictures given by the 5-inch lens, $5 \times 3\frac{3}{4}$.

$7\frac{1}{2}$ in. = A. (front combination)	do.	do. $4\frac{1}{4} \times 3\frac{1}{4}$
9 in. = C.	do.	do. $3\frac{3}{4} \times 2\frac{5}{8}$
10 in. = A. (back combination)	do.	do. $3\frac{1}{4} \times 2\frac{3}{8}$
$14\frac{1}{2}$ in. = D. (back combination)	do.	do. $2\frac{1}{4} \times 1\frac{5}{8}$
18 in. = C. (front combination)	do.	do. $1\frac{3}{4} \times 1\frac{1}{4}$

Another way of achieving the same end is to draw rectangles of the sizes arrived at as above, on the focussing screen. Then, if one always uses the same lens (in this case the 5-inch) for picture-finding, one can at once see which other lens will include just the desired portion of the picture.

POLISHING THE LENS.—A surface free from dust has much to do with bright pictures—more than many beginners suspect. This because the light, which is stopped by the dirt on the lens instead of forming the image, is scattered in all directions uniformly over the plate, causing fog. But care must be taken not to damage the lens by dusting it with anything which happens to be at hand. A bit of wash-leather or a clean, soft old pocket-handkerchief can be recommended. Many of the newer lenses are easily scratched or abraded. The best material for polishing is a bit of old silk, washed and re-washed many a year ago, "when grandma was a girl." Soft, well-washed muslin is also suitable.

Because the lens of your hand camera is where you cannot at once get at it to see if it is clean or not, don't assume that it is. Unscrew some part of the camera—it is generally possible to do this—and make sure that the glasses have not a season's dust on them.

THE LENS SHADE.—Better than the diaphragms sometimes advised for the inside of the camera is a screen for the lens *outside*. Both serve the same purpose, however—to cut out rays which would reach the plate by reflection from the sides of the bellows and thus lead to fog and veil. The diaphragm in the camera cuts down the cone of rays passed by the lens; the lens shade limits the view to the subject required on the screen, or rather cuts out the bright sky or water adjoining the picture proper, which is the chief thing so far as preventing veil is concerned. The lens shade need not be bulky. If a roller-blind shutter is used on the lens hood, all that is needed is a piece of thin black card, or metal, stiffly hinged above the aperture so that it can be set to stick in any position. The most handy way of doing this is, fix the halves

Digitized by Google

of a "pull-off" hinge, one to the shutter and one to the shade, attaching the latter when it is wanted. Generally the shade will be used above the lens, screening strong light from the sky, but for subjects with brightly lighted water against a dark background it may be wanted below the lens, and then the shutter is fixed on upside down.

A LOST LENS-CAP can be replaced in several ways. In the first place, the focussing cloth is folded into a little wad, just before the dark-slide shutter is withdrawn, and held firmly in contact with the lens hood. Exposure is made simply by raising the hand an inch or two.

Half an hour's work with a penknife will produce a very respectable new cap. Cut a disc of stout card and fit a rim to it with a number of short narrow pieces of black tape and fish glue or gum. A lining of velvet, likewise fixed with fish or Aqua glue, or seccotine, and the cap is complete.

The chemist can usually supply a pill-box lid which, with a velvet lining, will serve well as a cap.

WHEN SINGLE COMBINATIONS STICK and cannot be unscrewed with the fingers, get a piece of tape, make one turn of it round the part to be unscrewed, and several times pull the remaining end in the direction for unscrewing. If this fails, cautiously apply heat with an alcohol lamp and attempt to unscrew with the fingers; but remember that if you heat the lens very much, and especially if rapidly and unevenly, you will probably crack the glass.

F/ NUMBERS.—A card should be kept in the pocket giving the *f*/ values of the stops of double lenses when used with the single combinations. In the case of an ordinary R.R. it is near enough to assume that exposure with a given diaphragm used with either of the component lenses alone will be four times that needed with the complete lens at the same aperture as marked. But it is different with unsymmetrical lenses such as Dallmeyer's "Stigmatic" and Watson's "Holostigmat."

The following is the writer's table:—

Whole lens - *F*/	8	11	16	22	32	45
Front lens - *F*/	14	20	28	40	56	80
Back lens - *F*/	18	25	36	50	72	100

To find these *f*/ numbers obtain from the makers, or measure, the focal lengths of the single lenses and divide by the diameter of the various stops.

N.B.—In the case of the complete lens the *f*/ numbers cannot be found by this simple method, owing to the concentration of light by the front lens.

IS THE CAMERA LIGHT-TIGHT? is a question which can be easily answered in the case of a stand-camera, less readily in the case of one of box form. To test, extend the bellows to the full, cap the lens, and, placing the camera in the brightest daylight available, envelop the head in the focussing cloth and scrutinise the interior of the apparatus, the ground-glass being thrown back. For a minute or so you will not be able to see any minute holes, even if they are there. Therefore let the examination last at least a couple of minutes, turning the camera about so that all parts catch a strong light. During the time move the fronts within their extreme limits and make any other adjustments which may lead to the uncovering of a leak. Not a pinpoint of light should be discernible.

If electric light is at hand a very excellent way of testing for light-tightness is to place an incandescent lamp inside the camera, leading out the connection through the lens, removing the glasses and wrapping the hood in the focussing cloth so as to make the exit without escape of light. The dark slide is put in place, and the whole apparatus being in a perfectly dark room, any minute leakage of light can be detected. Hand cameras of the magazine and other types are not so easily examined by actual inspection. If this can be usefully done, all the better, but a test can be made as follows:—Load the camera with a rapid plate in the usual way, but fixing a disc of black paper to the centre of the plate. Let the apparatus stand in a bright light for ten minutes, unload, remove the paper and develop the plate. The marginal portions should be as clear of fog as the masked centre.

CAUSES OF LEAKAGE.—One of the most frequent is too thin, or worn, velvet between the front proper of the camera and the sliding lens-boards. The obvious remedy is to renew the velvet, sticking it down with thin hot glue. Fish glue is not so good, as it does not resist damp.

Pinholes in the bellows.—Put on a tiny patch cut from a bit of old kid glove and fixed with just a thin film of fish glue, or a piece of black cycle-tyre repairing rubber, which can be attached with the rubber solution supplied with the cycle-repair outfit; or a bit of black court plaster will do at a pinch, or even a fragment of stamp edging made non-actinic with ink.

Leakage between the dark slide and the velvet on the reversing back of the camera can be seen by examining the inside of the camera from the front under shutter of the focussing cloth. A new velvet will usually put things right, or the dark slides may be working loosely and need repair.

Cracks in the woodwork of the camera, from a fall or from unseasoned wood, do not invariably mean leakage, but should be filled with a cement of the very finest sawdust mixed with half its weight of plaster of Paris and made into a paste with liquid

Digitized by Google

glue. It is used as soon as made, being rubbed into the cracks and the surplus quickly wiped off with a damp cloth. It sets very hard.

Another filling consists of equal parts of plaster of Paris, powdered resin, litharge and treacle, with enough gold size added to make the mixture about as thick as putty.

SOFTENING A LEATHER BELLOWS, which has become hard and shows signs of cracking, is best done by sponging gently with warm water (very little of it), drying with a soft cloth, and then applying a thin coating of castor oil. Apply the oil for several days in succession, letting the leather take its own time rather than force the folds apart, which would most likely cause cracks.

The bellows should be firmly fixed at each end of the camera. On long storage it is apt to separate. Again hot thin glue, or fish glue.

THE CAMERA LEVEL.—Have some means to aid the eye in placing the camera level when viewed (1) from behind ("the picture straight on the plate"), and (2) from the side (the plate vertically edgeways and thus rendering buildings, etc., in the view with their vertical lines properly parallel and vertical). I prefer a two-way or level on the camera back, as it separates the levelling into two stages, but a circular level answers just as well. Or, the "plumb" levels can be used, though my experience is that they must be at least three or four inches in length, not barely more than an inch as usually sold. Straight pencil lines about half an inch apart and parallel to the sides of the focussing screen, are a useful means of telling whether the plate is vertical by comparing the vertical lines of the image with them. Only remember, not every cathedral column *is* strictly perpendicular.

DUST IN HAND CAMERAS is caused by sharp metal parts of the instrument working on wood and thus grinding a fine light powder all the time. Also by dead-black chipping off from sheaths. Good makers of hand cameras avoid the former cause, and the latter is obviated by having sheaths of "black iron" (*i.e.* unturned iron) which does not want blacking sheaths if thin oxidised steel are made. They have a dull black finish, and of course there is no pigment to chip off and settle on the plate, causing pinholes.

A little glycerine smeared over the inside portions of hand cameras tends to keep the plate free from dust, though this is not an infallible prescription for spotless plates. If the glycerine will not take readily, roughen the part with a bit of emery cloth or a fine file, brushing the dust away before rubbing on the glycerine.

IS THE SHUTTER SAFE?—Habitual users of instantaneous shutters are well advised to keep the plate separated from the outside world only by the shutter as little as possible. The shutter of plate-holder or changing box should protect it until the time is at hand for exposure. A lens shutter suspected of fogging may be tested thus: Cover one half of a plate with opaque paper, charge the plate-holder with it, and place in the camera as usual, allowing the lens to face the light for five minutes with the shutter of the plate-holder withdrawn but the lens shutter set. Develop, and note if the unshielded part of the plate is fogged at all.

THE PNEUMATIC BULB AND TUBE will not stick to metal parts of the apparatus, such as the valve nozzle in certain forms of diaphragm shutter with pneumatic release, if the metal be touched with a pinch of French chalk and the rubber be dry, a point to note when fitting up for a long journey.

Bulbs and tubes that have hardened with time can, in most cases, be saved by letting them soak in a bath of ammonia one part, water two parts, for a longer or shorter time.

CRACKS AND PINHOLES in rubber bulbs are repaired with a cycle rubber solution in the cyclist's manner, though usually it is better to get a new bulb.

When putting away rubber tubes and bulbs they should be smeared over with just a thin film of glycerine to prevent them becoming hard.

A NAME-PLATE ON A CAMERA is not entirely vanity on the part of the possessor, but is a safeguard against theft, or rather of assistance in the recovery of a stolen camera. Those who have access to a "name-plate" slot machine will probably choose this easiest and most inexpensive form of manufacture. But an engraved brass-plate does not cost a great deal, and unless the reader is a very neat penman, will be infinitely superior to the home-made article. However, here is the process for the latter:—Polish the surface of a thin piece of brass and warm it (not the polished side) over a gas flame. When fairly hot rub a piece of beeswax over it, getting a thin and even film on the metal. When the wax is set, make the lettering with a fine-pointed stylus, and prepare for etching by putting a rim of soap about one-eighth of an inch high all round the plate. Nitric acid about 1·2 sp. gr. is now poured on, and allowed to remain until the plate is sufficiently etched.

FINE FOCUSSING.—The photographer who anticipates focussing in dark places cements a microscopic cover-glass to the centre of his focussing screen with Canada balsam, laying a pair of fine hairs between. These he uses to adjust and control his focussing magnifier, for by first getting them sharp in the magnifier he sets the instrument for the lens image falling on the ground-glass, and in after-focussings he prevents the eye "accommodating" itself by

Digitized by Google

obtaining both hairs and image in focus at the same time.

INSTEAD OF GROUND-GLASS a focussing screen of fine grain is given by the following varnish :— Dissolve gum sandarac, picked, ¼ oz.; white lac, 1½ oz. in wood alcohol, 20 oz. Filter, and add as much finely powdered tartaric acid as it will dissolve, about 120 gr. Shake the bottle containing the mixture at frequent intervals for several days, then let it settle for a couple of days more, and pour off the clear liquid. Warm a glass plate, flow over the varnish, and again warm, just as when coating a negative with the ordinary hot varnish.

BIND THE GROUND-GLASS with stamp edging or slide binding before starting on a journey, for in the event of its breaking, the pieces will (most probably) then keep sufficiently in place to retain it in use.

THE GROUND-GLASS is improved, as regards brilliance of the image, as follows :—Clean it perfectly in hot soapy water, with some soda dissolved in it ; rinse and dry. Flow over it some of—Beeswax, 120 gr. ; yellow resin, 120 gr. ; turpentine, 20 oz., draining off excess and leaving the coating to dry of itself. When dry, heat the plate in the oven or over a gas burner until the coating becomes fluid, and at once wipe it off with a bit of flannel and polish the still hot plate with a clean piece of the same material.

IMPROVISED FOCUSSING SCREENS.—Those who have never had the misfortune to break their one and only focussing screen when "miles from everywhere" may sniff at the following prescriptions. But others have found one or another of them the way out of an uncomfortable dilemma.

Sacrifice a plate and remove the film from it with a penknife, leaving a strip about ¼ inch in width all round the edge. Cut a bit of oiled paper the size of the plate, and moistening the gelatine border, rub the paper into contact with it. The paper will adhere firmly.

The above is a good deal better than the glass coated with starch paste or smeared with putty, or the wet pocket handkerchief stretched on the vacant frame, which expedients have been resorted to *in extremis*.

AN UNBREAKABLE FOCUSSING SCREEN may be carried in the shape of a piece of celluloid matted by grinding with the finest emery powder. A waste cut film supplies the celluloid.

One objection to celluloid, except in the case of small cameras, is its unwillingness to lie perfectly flat. Hence it is advisable to first replace the ground-glass by a piece of thinnest clear glass. Against the inner face of this glass, that is, the one nearest the lens, press a piece of matt celluloid, matt side against the glass. A second piece of glass, same size as the celluloid, is then pressed against the latter and fixed in place with pins like the back of a picture frame.

Or a piece of fine engineer's tracing paper or cloth, glued into a frame of stout thin card and carried between two cards to keep it flat, may save the situation at some time.

THE SOLID PATTERN OF PLATE-HOLDER (the "American" pattern) has certain advantages over the "book" or English slide. The chief are :— The "pull-out" shutter is more convenient in hand-camera work than one which only folds over the dark slide ; plates are loaded into the slide and removed from them much more quickly than with the "book" pattern (I would sooner load a dozen solid slides than three "book" ones, and I can handle my solid slides in total darkness almost as well as in the light of the dark room). Thirdly, by having one side of the pull-out shutter labelled EXPOSED, one need never be in doubt as to which plates have been through the camera, and this without the trouble of the gummed label advised to absent-minded users of "book form" slides. Many solid slides have shutters prepared for writing with a pencil, so that notes of the day's exposures can be recorded there.

On the other hand, most patterns of solid slides are not adapted to receive carriers for smaller plates, and also, though the usual American slide is lighter than the English, it is weaker and will not stand a great deal of knocking about.

One further caution as to solid slides with shutters of millboard or other absorbent material—never be tempted to carry home a plate wet from the washing tank in it. That will do no harm to a hard mahogany slide, but a cardboard shutter swells with the moisture and cannot be withdrawn. The only way is to let the shutter dry, an almost impossible process with a wet plate in the holder.

CASES FOR DARK SLIDES represent money well invested. I prefer the rigid pattern in the smaller sizes—those that will go into your side pocket—and the flexible for the bigger slides. The slides are protected in travelling, and—more important still—from light up to their instalment in the camera. Cases — stiff and folding — are made by several firms.

IN DRAWING THE SHUTTER FULL OUT, an indicator is advisable, as the camera may be moved if force is used to the shutter to see if it is drawn right out. The indicator is simply a line of white or red enamel paint run across the fully drawn shutter when the slide is not in use.

MENDING LEAKY PLATE-HOLDERS.—A mixture of Indian red (water color) and fish glue worked into the defective joints and painted over the parts

Digitized by Google

external to these latter, is a remedy for trouble of this kind which follows the owner of "cheap" apparatus. The mixture dries hard in a short time, and except that it is liable to soften if it becomes moist, is an effective cement.

SLIDE SHUTTERS WHICH WORK STIFFLY can be eased by rubbing the edges with Castile soap and French chalk, working them open and shut until they go easily.

Or if the shutter is very hard to move, examine the rebate of the shutter for signs of friction, and touch these parts lightly with a fine file, rubbing them also with a soft lead pencil.

Paraffin wax and the mixture of French chalk and beeswax (see "The Tripod") can be used to ease the movement, not only of the shutter, but of the dark slide in its grooves.

DARK SLIDE PARTITIONS with springs scratch off the enamel or asphaltum from backed plates and cause dust in the slide and pinholes in the negatives. A better partition for use with backed plates is made by gumming two pieces of needle paper (size of the plate) together at the edges, sandwiching between them a little cotton-wool or wadding.

THE HINGE OF THE DARK SLIDE SHUTTER can give trouble in two ways:—(1) It may, when new, fog the plate because of some emanation from the leather itself or from the chemicals used in preparing it; and (2) when cracked or worn with age it may leak, fogging the plate by light action.

The best preventive for this is to expose the slides freely to light and air for, say, twenty-four hours. The hinge (inside) may be painted with a solution of gelatine, about ten grains per ounce with about one grain of potassium bichromate added.

The best remedy for the second defect is to have new hinges put in, but where this cannot be done a good method is to rub in lampblack (the soot from the chimney will do) with a little glycerine into the hinge on the inner side of the shutter. The surplus is rubbed off with a cloth, and a couple of coats of rubber solution given—the second as soon as the first is dry.

TRIPODS THAT STICK can be eased with a mixture of French chalk and beeswax — the latter melted, while the former is stirred in. The mixture is a good lubricant for any sliding woodwork.

THE TRIPOD SCREW will always be at hand when the scene of action is reached, if you will attach it with a penny split ring to your usual bunch of keys. Excepting the special tripod heads with the screw built into them, so to speak, I know of no better plan than this.

Screws which clamp the sliding legs of tripods will sometimes get jolted out *en route*. The preventive is to burr the inside end of the screw; it will not work out then, but otherwise does its duties.

IN CONFINED QUARTERS, it is sometimes only possible to tilt the tripod sufficiently by turning the front leg back between the two hind ones, which are spread out towards the front. This is by no means a rigid position, but occasionally, as in photographing skies or clouds from balconies, the only one which can be taken up.

LEVELLING THE TRIPOD is a much quicker business if one leg extends behind than if the single leg is in front. The former is not quite so convenient, perhaps, but by moving the back leg to right or left, you can level the picture on the focussing screen to a nicety in a second or two, and while you watch it. It is often best to have a spirit level on the camera, or better still a two-way level. If the bubble shows that the camera is fitted one way or the other, pull round the back leg in the direction the bubble must come. The second level shows whether the plate, viewed edgeways, is upright. It ought to be so if any straight lines come into the picture. In this case you must move the hind leg of the tripod towards or away from the camera in the direction opposite to that in which the bubble should go.

THE TRIPOD IN AWKWARD PLACES. — On polished floors of wood or stone the tripod points must be shod so as not to slip. Three corks cut away at a slight angle and pierced to take the spikes of the legs answer this purpose, and if of fair diameter, say 2 inches, are of service also in preventing the tripod from sinking into the fine sand which one meets with in seashore work. India-rubber corks answer just as well, except on wet pavements, when the rubber slips very easily.

Better than shoes of this kind is a tripod stay, one pattern of which is sold by Marion. The stay consists of three radiating struts, like the Manx emblem, which are clamped together at the centre, the other ends being fixed to the tripod. Keeping the centre clamp loose, the tripod is set up in place, and then by a turn of the screw the legs are rigidly connected. Hence each leg keeps the others from slipping. One great advantage of the stay is that the camera, after having been once set level, can be moved on to another spot and will be level there. I am speaking now of indoor work in churches or galleries, where the time saved by thus using the stay is often very great. The stay is also convenient when steadying or anchoring the tripod in a high wind.

IN WINDY WEATHER the tripod is apt to vibrate so much as to interfere with sharpness; and even if the gale is not continuous, sudden blasts may overturn the camera while the operator

Digitized by Google

is busy ocussing. The old time plan is to hang a net bag from the tripod screw and fill it with good sized stones, or anything heavy which can be collected.

Instead of the bag of stones, the plan of anchoring the tripod has been preferred by some. The best place by which to anchor the tripod is about midway between head and point. The three legs may be braced together at this point, taking the cord through a ring and from this point carrying it to a stout iron screw fixed in the ground. The tripod stay mentioned above serves well as a means of anchoring the tripod to the earth.

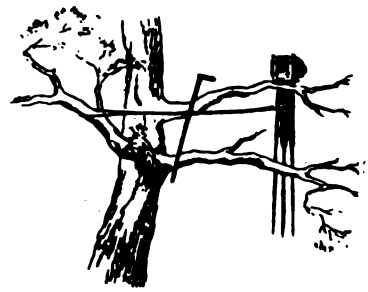
THE TRIPOD IN WATER.—Seashore and mud-flat photographers have often had to walk in water and mud into which the tripod sinks considerably. G. D. Firmin, in *The Photo-Miniature*, on "Seashore Work," says: "In this event it is necessary to put some kind of an extension on the tripod legs. A stout stick securely lashed with twine or wire will answer. It must have a long bearing on the tripod leg. If working in water of some depth, they must be weighted to keep them down, otherwise they will float up, carrying the camera with them. I made for such a purpose three stout oak extensions, six feet long, with a socket in the top of each, into which the tripod leg would fit snugly for six inches. A piece of metal round this, with a damping screw like that on a regular tripod, completed the outfit."

A TEST FOR STABILITY.—While so much timber in a tripod does not guarantee its firmness, the tourist should not be tempted into taking a flimsy tripod. A rough and ready test in this connection is to set up the tripod, and placing one hand firmly on the head, to turn the hands with a corkscrew motion. A tripod of ample strength and stability should not "wriggle" to any extent under this treatment.

AN ACCIDENT TO THE TRIPOD most likely to be feared is a lengthwise split of one of the sections. Le Page's liquid glue, applied with a wooden match, will meet the emergency, the split being tied with thin whipcord.

FOR FIXING THE HAND CAMERA quickly to the tripod and for adjusting it level thereon, an accessory which I have cause to value is made by Hume of Edinburgh, under the name of "quick level top." The fitment is difficult to describe, but one part of it is fitted to the under side of the camera and the other to the tripod top, and you can fix the two together in a moment. The device is one I would not willingly be without when doing landscape work even with a hand camera. For your most ardent hand-camera man knows that the best of all places for his instrument is on a stand.

UP A TREE or on the inside of high railings, the camera, on its tripod, may best be held in position by means which are illustrated in the little sketch. The legs are so spread as to hold the camera in an opening, above the railings, or wherever it is most convenient for manipulating; a double string is then



passed around the legs, drawn through to the near side of the branches (or what not), and fastened by pushing a walking-stick or other convenient rod through it. To make the whole quite tight, a short stick may be passed between the two cords, twisted a few times, and anchored against a twig.

DIRECT-VISION POCKET VIEW-FINDER. — A simple pocket view-finder can be made by anyone, from wood, thin metal, celluloid, or what not, on the lines shown by sketch. A is the eye-piece, fixed on the end of a base-rod C, and B is the finder, able

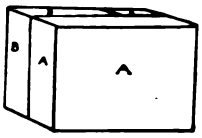
to slide freely along the rod, and always at right angles to the direction of the rod. It is only necessary that the eye-piece shall be directly opposite the centre of B, and that B shall be proportional in shape to the plate ordinarily used. Then it is easy to mark figures on the base-rod to indicate, immediately a view is found, what focal length of lens is needed to give it on the plate; or, inversely, by fixing B to the figure of any focal length one can immediately see what view it will cover. The actual distance-marks on C will bear the same proportion to the focal length of the lens as the size of B does to the size of the plate. Thus, if B is one quarter the size (diameter, not area) of the plate used, its distance from A will be one quarter the focal length of the lens needed to give an identical image on the plate. Thus, in making such a finder for a 5×4 camera, on one-fourth scale, the view-space in B would be $1\frac{1}{4} \times 1$ in., the centre of the eye-hole A should be half inch above C, and quarter inch marks on C would represent inches in the focal length of the lens.

Digitized by Google

VIEW-FINDER AS LENS-SELECTOR.—If you use a wire view-finder, of the size of the plate, fixed over, or nearly over, the centre of your lens, and viewed from the plane of the plate, it can easily be made to indicate exactly the focus of lens needed for any given view. Place a datum-mark on the fixed part of the baseboard and a scale of inches to move past it, on the moving part of the baseboard. This can be so arranged that inches will read off exactly the focus of lens required.

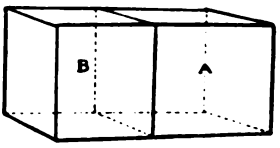
PACKING AND CARRYING APPARATUS AND MATERIALS.

THE CAMERA CASE. — Some, I know, are advocates of one case for the whole outfit—dark slides, camera, lenses, etc. My experience of that system is that it is a mistake, with the solitary redeeming feature that it supplies a course of physical culture. One case, and that a stout one, for the whole kit, is right enough for use when one journeys on, by train or steamer, to the next place, but for the day's work it is far better to have the weight divided: the camera strapped in the focussing cloth as one parcel; the slides and other odds and ends in a satchel slung across the shoulder.



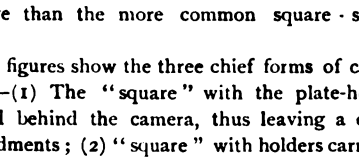
(1.)

The kit travelling case is best of the long narrow form, introduced first in this country by the Thornton - Pickard Co. It is more quickly packed and more easily taken about as personal luggage than the more common square - shaped case.



(2.)

The figures show the three chief forms of camera case:—(1) The "square" with the plate-holders carried behind the camera, thus leaving a corner for oddments; (2) "square" with holders carried at



(3.)

side, a more compact arrangement, but, as frequently sold, with no space for oddments; and (3) the long flat pattern mentioned above.

THE MOUNTAINEER'S RUCKSACK has found an ardent supporter in Percy Lund, who uses one 19 × 17 in. for a half-plate apparatus. The rucksack is made of strong waterproof-cloth with eight eyelet holes round the mouth, through which a stout cord is threaded, the mouth being closed just like a lady's work-bag. It is worn by means of the straps shown, which are of leather in the narrow part and then of broad webbing. The two ends of webbing are fastened to a central ring, worn upon the shoulders like the strap of a knapsack. The total length of each shoulder strap from the central ring to where they are fastened to the bag is 33½ inches; a few holes in each buckle strap (one is seen on the right of the figure) adjust the bag to any size of person.

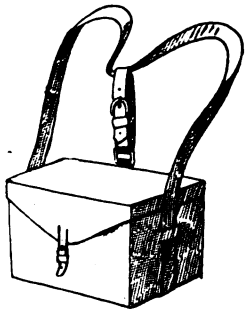
Writing some time ago to *The Photographic News*, Mr. Lund gave the following as the contents of a rucksack carried on a long tramp over a pass of 2,000 feet:—"Half-plate camera, six double slides, 1½ dozen extra plates; tripod (strapped on outside of bag), lenses, two books, parcel of sandwiches, a change of underclothing, toilet case: in fact, necessaries for a two or three days' journey. The load was heavy—I am sorry I did not have it weighed, but the rucksack hangs so comfortably that even this 'pack' did not interfere with my enjoyment or cause me the least distress. Why photographers continue to carry their kits in their hands or slung over one shoulder by a narrow strap I cannot conceive."

Messrs. Butcher make a rucksack specially for photographers.

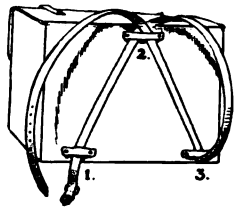
A LARGE CAMERA IN THE FIELD is best carried by a shoulder-strap arrangement, of which several patterns have been adopted very similar to the following, as used by Mr. George Bankart of Leicester:—Two shoulder-pieces of saddler's narrow girt webbing (attached by a short adjustable strap to prevent slipping off the shoulders) are fitted with straps passing under each arm. These are attached to a short buckle-piece which enables them to be shortened and lengthened as convenient. From the buckle-piece is suspended a brass spring hook such as is used for horse-bridles. The spring hooks are hitched into a narrow strap passing round the parcels, which hang one on each side of the person wearing the yoke.

Digitized by Google

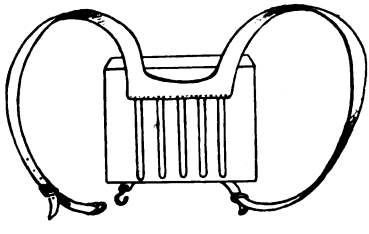
FOR CARRYING THE HAND CAMERA in places where there is much climbing the usual plan of slinging it over the shoulder is tiring and inconvenient. Sir William Abney, who has had a long experience in Alpine photography, carries the camera, or rather its leather case, knapsack fashion as follows:— The strap is formed into a double loop by the central buckle strap, the length of which is adjusted so that the camera lies in the small of the back (see fig.).



A somewhat similar device is shown below, one single strap serving to secure the camera or its case. Three strips of leather are sewn (to a case) or riveted (to the camera) and the strap passed through them in the order shown — through 1 and 2, round 3 and up again, and through 2 again. The loop 2 3 is then put round the left arm and the other end passed over the right shoulder and buckled under the arm.



This latter I regard as a good improvisation, but after all, the mountaineer's regulation knapsack straps is the best for the photographer also. The sketch shows it plainly. The vertical bars on the camera case are strips of cane to preserve an air space between the latter and the photographer's back.



A BROKEN STRAP can be repaired with a bit of wire — a lady's hair-pin, or from a soda-water bottle.

IN PACKING photographic luggage a portmanteau is best selected if there are a fair lot of plates to go in, as it protects them more effectively from shock. The "Gladstone" bag will serve for a few dozens of small size.

Take special care, in the case of large plates, to avoid hard objects pressing unevenly on the package, for it is quite possible, as bitter experience shows, to fracture a plate, or to keep it so strained that a shock to the whole luggage breaks it.

A ROLLER-BLIND SHUTTER is best carried, as the manufacturer sends it out, with the tube wrapped round it and the bulb tucked into the aperture. The spring should be left at low tension when the shutter is out of use for some time, and the blind pulled *half*-way up. In this position the part of the blind which has to protect the plate before exposure does not get worn, and it is most important to keep this part in good condition.

CARRYING A BOX OF PLATES protected by its wrapping might be thought an obvious precaution did we not see instances otherwise. The proper way is to slit one end of the wrapping, leaving it hinged by the thicker (*i.e.* folded) side as shown in the figure. Sometimes the box sticks in the wrapping, being held by paste which exuded from the overlap when the wrapping was put on. But a pencil run down between box and wrapping will detach it.

LIQUIDS are best carried in flat corked bottles, conveniently 8-oz. medicine bottles or "square flats." I can recommend the plan of carrying them in two varnished wood trays fitting one within the other like the two halves of the ordinary plate box. The bottles are carried safely, and each tray is available for development or fixing.

PACKING NEGATIVES OR EXPOSED PLATES FOR POSTING.—A package containing glass must be protected from the blows of the post-office stampers or the rough treatment of railway men, either by having a solid wall round it which will keep off the shock, or by being freely encased in a yielding wrapping which will annihilate the force of the attack. A very common mistake is that a cardboard box is sufficient for the first method, and many a negative has been smashed to bits from this cause. A light wooden box may be scarcely heavier than a cardboard one, but it does not yield to the blow. The negatives are wrapped up with just a piece of soft paper between each or a long strip "zig-zagged" through them and tied up with string into a compact parcel, which is packed in the box with paper shavings, hay, or other light material. Affix the stamp or parcel-post label right in one corner of the lid, where, from its being nailed to and supported by the sides, it is naturally stiffer than the more central portions.

For the second method the plates may be tightly packed in a cardboard box and then copiously

Digitized by Google

wrapped in corrugated paper or wadding. Cut your corrugated paper into long strips, two the same width as your plate box and two of width equal to the length of your box. Or all the better if the strips are half an inch wider than these dimensions of box. Wrap round first a wide strip and then a narrow one, repeating with the second pair. Tie the whole up tightly and put in a brown paper wrapping, and for a moderate-sized package, say a dozen or two of quarter or half-plates, they will travel with perfect security.

N.B.—In all packing of glass plates beware of leaving any odds and ends of paper, grit, or any packing between the plates which will put a strain on them when they are tightly packed. Neglect of this favors breakage.

PACKING FOR THE TROPICS.—The first essential in plates, films or papers to travel to Asia, Africa, South America, and other distant or tropical countries, is that they should be perfectly dry at the time of packing. If that is not the case, it is not much good to pack them ever so securely. The moisture in the materials will be vaporised in hot regions, and will act injuriously. The dryness of the cardboard boxes, or tubes, and of the paper wrapping, is no less important than that of the materials.

Most makers will quote for plates soldered in zinc cases. Two or four boxes each of one dozen plates is a convenient number to pack in one soldered case. Each box of plates is wrapped in tinfoil and the corners of the metal case stuffed with packing such as paraffined paper. In France, varec, a kind of dried sea-weed, is said to be used for this packing.

For wrapping plates intended for the tropics a protective paper, made as follows, has been suggested by M. Colson, whose recommendation has been adopted by the International Congress of Photography:—Ordinary white paper is soaked for five minutes in a 3 per cent. solution of potass bichromate. It is dried and each side exposed for several hours to sunlight. This oxidises the starch in the paper, fills up the pores, and renders the paper impermeable. Moreover, any hyposulphite in the paper is oxidised. The paper should be kept in the dark.

CYCLE AND CAMERA.

THE CAMERA TO AVOID on a bicycle tour is the magazine pattern with the plates carried in sheaths. The reasons are that it is an awkward shape for carrying, and, secondly, that it is almost impossible to have the sheaths in such a solid block that they do not rattle. A worse evil than this may befall in those patterns where the edge of a metal sheath works on a wood surface, or where the sheaths are japanned. The jolting during a long journey grinds a fine dust into the apparatus, and ruins the negatives with pinholes.

A folding roll-film camera is the cyclist's ideal—light and easy to carry; next to it one or other of the folding-plate cameras with dark slides or a changing box. I prefer slides, because you can pack the plates tightly and avoid rattle and dust. It is necessary to take special care that the plate is pressed tightly into the slide. If it is jostled this way and that by the motion of the machine, the sharp edges grind dust off the woodwork. Kodoid plates are excellent in their freedom from this bad habit (I need not name their other virtues). Backed plates need all the more careful packing in the slides, and great as the advantages of backing are, I am disposed to think it is best to do without it on a cycle tour. At any rate, you must not use caramel. An asphaltum backing, with a little rubber or turpentine in it, does not make "frit" so easily.

When we come to the bigger field-cameras—half or whole plate—the carriage of the outfit must be considered with care. Most of the difficulties involved in carrying it on a "bike" can be avoided—by travelling on a tricycle. And that's the best advice I can give.

CARRYING THE CAMERA ON A CYCLE.—You may fix the apparatus (1) to yourself, (2) to the handle-bars, (3) in the diamond, or (4) over the back wheel.

Plan No. 1 is not as bad as it sounds, and for freedom from vibration it is undoubtedly the best. For one season I carried a quarter-plate kit on my back, and though that was before the days of high gears and long journeys, I suffered no inconvenience in trips of fifteen to twenty miles each way. The plan has this great point in its favor:—The camera gets less vibration than in any other position. I carried it, slung field-glass-fashion over the shoulder, the best way, I think, in view of a possible spill, but others prefer the knapsack method given in another section. I have a friend who carries a half-plate camera, six plate-holders, five lenses, an extra dozen plates, and a changing bag in a knapsack, and who is able to do good rides or walks. He fixes the tripod to the machine.

Side pockets are the worst places for carrying collapsible cameras which will go into them, for in the event of a side slip the end of the camera will be sudden and complete. The sling strap or knapsack is better even for the smallest apparatus; or if you must use a pocket, the breast pocket is safest.

Plan No. 2 is for small cameras only. There are several forms of carriers sold, which attach to the camera in front of, or above, the handle-bars.

A spring carrier from the handle-bars is convenient,

Digitized by Google

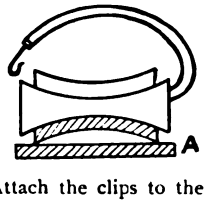
and is not so bad as at first appears. The springs absorb all the small vibrations which would fret the internal arrangements of the camera, and the swing of the carrier when riding on a rough road is not so harmful. If it were not for the spring bracket on the back of the lamp, it would probably go out in ten yards, owing to the small vibrations. R. & J. Beck make a spring carrier, and Tylar of Birmingham makes them in several forms for the handle-bars.

The top-bar of the diamond is not such a possible position now that the narrow-tread cycle is so largely built. The camera must be exceptionally slim to travel there without chafing the rider's legs. But for small folding cameras, the most modern of field cameras, or for sets of dark slides, the position is a good one, both in theory and practice, as the vibrations of front and back wheel neutralise one another more or less. A thin wooden case made to just take the apparatus is the best way of setting to work. It is strapped on the top bar, to the saddle pillar and to the cross-bar of the diamond, the case being made to open on one of its side faces.

The last alternative, over the back wheel, involves a special carrier, and is best suited for the heaviest load the cyclist would want to have. For vibration this is the worst position that can be chosen. The carrier takes the form of a light platform supported by two struts from the back fork. For carrying the apparatus in this position, a basket is much better than a box, being lighter, and less liable to rattle. But it should be lined, to exclude dust, and the items of the outfit should be packed tightly in it, the camera preferably in the focussing cloth and the slides in their cases. Dust is the cyclist-photographer's enemy.

THE TRIPOD ON THE CYCLE.—After carrying the tripod strapped to the handle-bars and to the diamond frame, I have found it most convenient to suspend it from the lamp bracket, simply slipping the strap, which binds the three legs of the tripod together, over the bracket and affixing the lamp afterwards.

A tripod which is short enough to travel under the top bar of the diamond can be secured by a plan suggested by *The Amateur Photographer*. Get a pair of pump-clips, such as the Warwick Tyre Co. supply, cut off one of the bands and replace it by a piece of flat rubber sheet (1 × ⅝ × ¼ in.) as shown at A in the figure. Attach the clips to the top of the diamond, and press the tripod against the flat piece or rubber underneath. Fasten it by means of a small strap in the middle.



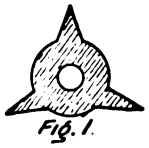
CHANGING AND DEVELOPING *EN ROUTE.*

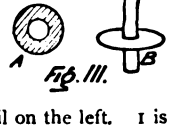
A TRAVELLING LAMP.—Various as are the patterns of folding or collapsible lamps—about the best, at a small price, is Perkin's 2s. triangular lamp—there is one form which I am surprised not to find on the market, as it packs quite flat and cannot be broken. It is made as follows:—A piece of ruby medium 30 inches long and 13 inches wide is given a stout 1-inch border on each side by turning over 1 inch and pasting down, thus reducing its width to 11 inches.

With this we make a cylinder 11 inches high and 20 inches in circumference, 10 inches being single thickness and 10 inches double. Take a piece of thin tin plate 14 × 11 inches, bend it to the shape of a U, and put it inside the cloth cylinder. The spring of the tin will stretch out a flat surface of cloth 11 inches high by about 5 inches wide, and this can be single or double thickness as required.

For the lid a piece of tin must be cut 1½ inches larger all round. The front is turned down, and some V-shaped pieces are cut from the back to hold the upright part of the lamp. A few holes must be punched in the cover and a piece (riveted on at its ends) is bent out so as to be about half an inch distant and to prevent escape of light. A handkerchief or the focussing cloth makes the lamp light-tight at the foot.

IN HOT CLIMATES, and very often at home, the lamp or candle is a great nuisance. The best portable light I have come across is that of my friend Mr. P. R. Salmon. The drawings and description from *The Photogram*, August, 1900, will make it clear:—A wick is floated on oil by means of the float shown complete in the large figure and in





detail on the left. 1 is a piece of tin to the spikes of which are fixed three bits of cork (cut from a section of bottle cork, fig. 2). The candle wick is threaded through the disc of card A, fig. 3. Any thick oil (olive, colza, etc.) is burnt in the lamp, and

Digitized by Google

if the vessel is too deep the lower part can be filled up with water. Though primitive, the arrangement avoids the trouble which is caused by candles or night-lights melting in the lamp.

CHANGING EXPEDIENTS.—I must confess to preferring a proper lamp to the *impromptu* methods which famous photographers have found sufficient. The late W. K. Burton carried only a sheet or two of lemon-colored paper, pinning one to the front of a large box in which he placed a candle.

Sir Wm. Abney is in the habit of changing by the light, reflected and re-reflected from walls and furniture, of a candle placed beneath the table on which the plates are handled.

Another dodge of the same kind is to place a lighted candle in the fireplace, screening it with a newspaper and working in the shadow of the body or some article of furniture.

Moonlight, or the light from a street gas-lamp, is similarly used, after reflection from walls or ceiling.

These plans are safe enough so long as the work is done quickly and the direct rays from the light do not fall on the plate. They are less safe with iso than with ordinary plates, and extra caution is needed in adopting methods of this kind now that plates sensitive even to red are much more common than they were.

IN THE DAYTIME it is not so easy to find a spot which can be effectually darkened. One worker has recorded how he manages to do so in the country. He finds a loft or stable which is fairly dark, and places a good-sized tub or barrel without head in the darkest corner, open end towards the wall, thus shutting out all light possible from the room. With the focussing cloth now hung over the mouth of the barrel, the latter becomes a "dark room" in which the most rapid plates can be changed with safety.

A CHANGING BAG ought to be in the outfit of every tourist. It takes very little room—indeed it serves as packing—and it makes one independent of dark rooms and able to increase exposures over and above the full charge of slides, if such should be necessary. I have learnt to value my Beresford's "Paragon" bag, which is too cheap to induce me to make a bag myself, but I give a method (by a friend) by which such a bag can be home-made:—A convenient size of bag for quarter-plate work is 18 inches square. For the sake of light-tightness the bag is made threefold, black silesia outside and red Turkey twill in, with a lining of yellow sateen between. About one yard of each of these materials will be enough. The black and yellow materials are folded into the bag shape they are destined to assume, and seamed up each side and for about 8 inches along the centre of the front, leaving room for a 4-inch wide sleeve on the right side, and a 6 or 7-inch sleeve on the left side of the front. The left sleeve must be large enough to pass one plate-holder, or a box full of plates, or the camera itself, if it is one with a magazine that needs refilling in darkness. The red twill bag is made separately in like manner and fitted inside the first one, so that the rough sides of the seams face each other, the inside of the bag being thus quite neat. The sleeves are straight and about 6 inches long, but are cut and sewn in like the sleeves of a dress (ask your wife how that is). Each ends in a broad hem with a stout elastic insertion, or better still with two elastics, one at the end of the sleeve, and one near its attachment to the bag. I feel at sea in a technical description of this kind, and perhaps the reader may require outside help to fully comprehend the construction of the bag.

IN USING A CHANGING-BAG, work systematically, then you will never make the mistake of putting exposed plates back again into the holders. The following routine I have found most satisfactory, often changing thousands of plates (half-plate and larger) in boats, carriages, and crypts, and even on sunny hill-sides, without any accident. *To fill the bag*, lay it on a table, bench or step, or on your knees, and have your plate-holders and plates for changing convenient to the left hand. Pass the right hand through the small sleeve into the bag, then with the left hand pass in, through the large sleeve, first all the plate-holders, then the box of plates. If it is an unopened box, cut the covering-paper as mentioned in the next paragraph before putting it into the bag. Withdraw the right hand, and fix the left (large) sleeve over the left arm. To do this, pull up the sleeve of the jacket, place the arm in the bag sleeve, so that the inner elastic closes around the wrist while the other comes well toward the elbow, then pull down the jacket sleeve over the

bag's sleeve. It is fairly easy to adjust the right (small) sleeve around the right arm similarly, without withdrawing the left arm from the bag. *Arrange*

Digitized by Google

the plate-holders in a pile, on the knees near the body, and toward the left side of the front of the bag, with the plate-box on the top. If the holders are "book" pattern, have the hinges to the right; if they are American pattern, with draw-out shutters, arrange them so that the slides draw to the right. *Preparing the plates.*—Draw the plate-box from its wrapping-paper, and place the latter in the far left-hand corner of the box. Take off lid, and place it on bottom of bag, so that the box stands open in its own lid. Take out all the plates, keeping them in their brown paper wrappings, and place them on your knees, under the plate-holders. Place the empty box on top of the plate-holders. *Emptying the plate-holders.*—Take one plate-holder, open it, take out plates, and lay them face-to-face in box. Put empty holder in right-hand corner of bag. Repeat, until six double holders are emptied. *Refilling the plate holders.*—Close the plate-box, with the exposed plates, unwrapped inside it. Place the unexposed plates on top of the box, opening the first packet (usually of four). Then take the first plate-holder, fill both sides, close it, and place it under the plate-box. As the plates are all packed face-to-face you need never handle them to know which is the film side. The first lies film downward, the second is film upward on your knees, and so on, to the end. The second holder is filled and placed below the box, as has been done with the first. This empties one brown paper packet of four plates. Lightly fold the paper into its original creases, and lay it in the far left-hand corner of the bag. Proceed similarly until all the holders are filled. *Packing the exposed plates.*—Your plate-box now lies on the pile of filled plate-holders. Take off its lid, and place it on the bottom, as before. Take the box in left hand, let the plates lean forward so that you can count four, by touching their edges only, with the fingers of the right hand. Take these four in the right hand. With the left, take one of the brown wrapping-papers, open it, insert the plates, fold it in its original creases, and place this packet under the box. Repeat with the second and third set of four. Place them all in box, replace lid, and slide the box into its original outer wrapper. Then, but not until then, withdraw the left hand from the bag, and breathe freely. *Cautions.*—Work systematically, and do not hurry, then you need not sweat or swear. The bag will feel much too small at first, and you will be tempted to try changing two batches of six plates rather than one batch of twelve, but it is less confusing if you can change a whole box at once. In inserting or withdrawing the holders, always put the slide-end first, to prevent the slides being inadvertently caught and partially drawn. When changing less than a whole dozen, put the *unexposed on top*, in re-packing box. When using more than one class of plates (say backed and unbacked), only have one at a time in the changing-bag. *After repacking the plates* write on the bottom of the box the date and the district; and if some unexposed are left, add the words:—"—— unexposed on top."

MARKING EXPOSED PLATES.—Improved methods of development have made it less necessary to identify each plate with the subject as a guide to its treatment in the developer, but the best method of marking plates is to scratch the number in one corner of the gelatine film with a lady's stiletto, or write it with a lead pencil. I prefer the former, because I can then read the number easily on holding it up to the dark-room light, whereas deciphering pencil marks in the dark room is often difficult. The worst plan is to stick gummed labels on the back of the plates. A short course of practice in conveying the gum side of those labels to the plate is sufficient to recommend a more rapid method.

RE-PACKING EXPOSED PLATES.—The best method of packing plates which may remain some long time (months) before development, is in a solid pile, film to film. They thus come into contact with no deleterious material, and if well dusted when making up the pile, and if prevented from rubbing over each other, will come to no mechanical harm. The method is to lay a dozen in pairs, film to film, in a pile, and bind the lot together with gummed paper, afterwards wrapping twice in brown paper and replacing in the original box. American plaster applied without warming or wetting is a most convenient substitute for gummed paper, but how it will behave on long journeys in hot climates, I can't say. But the tourist might well have a roll of it with him, for he can repair a cracked dish or a perforated bellows with it in a moment.

The envelope system of bringing home exposed plates is the one I myself prefer to the above, though I should forego its conveniences and use the pile method for plates taken on a long tour. Within a few months I have never found the paper of the envelope to fog the plate, but I should not feel so certain of it if a much longer time elapsed, or if the plates had to travel home through the tropics.

Each plate, or a pair of plates if you like, is carried in an envelope which in turn is enclosed in an outer one. You can label the envelopes easily, and as you can handle them in ordinary indoor daylight, you can at once pick out on your return any particular plate which you may wish to develop. Another advantage is that each plate as it comes from the dark slides is popped into the envelope and runs the minimum risk of getting fogged by a light which one may use for changing only because there is no getting a better one.

Digitized by Google

PRINTED PAPER, newspaper, etc., must NEVER be used in contact with the sensitive film, as the ink fogs the emulsion, and the printing or pictorial advertisements are transferred to the negatives.

I know of no remedy for this, once the mistake has been made. I have heard that some have succeeded in eliminating the effects of the newspaper by rubbing each plate for five minutes with benzene on cotton-wool before the development—in the dark room of course. But I confess to having found the remedy ineffective the only time I tried it.

CUT AND ROLL FILMS call for care in re-packing as regards keeping them as dry as possible. As soon as exposed, the film should be sealed in a tin case by soldering with rubber cloth, or with the American plaster mentioned above. I know the majority of roll-film users ignore these precautions, which certainly are most needed in extremely moist climates. However, one firm (the Rotary Photographic Co.) has recognised the importance of the measure by issuing each spool in a tin case, so that the practice ought to grow.

Regarding the vexed question of keeping qualities of film in hot countries, I quote here from *The Photo-Miniature* on "Film Photography":—

"It has often been stated that celluloid films are unreliable in tropical countries. There is a measure of truth in this, but it is a wide statement which is only true in some cases. Given as reasonable condition that necessary precautions are taken, the danger zone may be narrowed down to the sweltering, low-lying *humid* parts of the tropics. Thousands of films, both roll and cut, have recently passed through our hands, the snapshots of journalists and officers engaged in the South African War, and in other African wars still nearer the equator. In some cases we have seen the entire results of some man's work, and in no case have we seen faults that could be charged to the climate, though there have been some which indicated inexperience on the part of the photographer.

"Except that old bugbear of the number printing on the film, the bulk of the troubles seem to occur when the film is in the camera or otherwise exposed to the influences of atmosphere. The chief faults are a general fogging, the film sticking to the paper backing, and spots or fungoid growths on the film or support, more often on the support."

CUT FILMS AND SPOOLS OF ROLL FILM call for no special cautions, except that they should not be subjected to pressure. Surround spools or packages with something soft. The reason is that pressure may cause local insensitiveness.

DEVELOPING EN ROUTE.—Take Mr. Punch's advice and "don't." The text-books tell you to develop one or two plates as a test of how your exposures are being made. That venerable hint seems to have been copied and re-copied by every writer since Daguerre, regardless of the tremendous variations in subject, light and shutter-speed. I fail to see what good it is to any one who adjusts, or tries to adjust, his exposure to his working conditions. The one or two plates you develop may be right or they may not; the same with the others. Add to this the difficulty of properly washing plates, and getting them home undamaged, and the technical inducements to develop on one's journey are very small indeed. Trust in Providence—and use an exposure meter.

I am speaking now of plates. For roll film, the Kodak Co.'s machine has removed all the difficulties from the process. I develop my roll film by machine, and I cannot add any hints to those in the detailed instructions issued with it.

But coming back to plates: there may be very cogent personal reasons why some of them should be developed—and even printed immediately after exposure

THE DEVELOPER FOR A TOURIST is the one he uses at home. That is to say, by the time it reaches the plate. But it can be carried in concentrated solution, or compounded from "tabloid" chemicals, by means of which practically any formula can be made up.

Almost any developer can be worked from a more concentrated formula than is necessary or convenient at home. Thus for pyro development I take with me on tour a stock solution of:—Potass metabisulphite, 250 gr.; sodium carbonate (dry), 580 gr.; potass bromide, 20 gr.; water, 10 oz., using 2 drms. of this to 1 oz. of water, and with 2 or 3 grains of dry pyro added. Anybody can adjust their own formula in like manner, finding the permissible concentration from the solubilities of the chemicals given in tables such as those in *Figures, Facts and Formulæ*.

The bottles should be fitted with corks (not glass stoppers) for greater security.

DEVELOPING TRAYS.—One can choose now between such a variety of light trays that I leave the reader to take his choice.

A tray can be extemporised from the lid of a plate box by running a melted candle all round the inside, and leaving it for a minute or two to set. The candle is melted in a tin by standing the latter in boiling water or by warming it over the gas.

DEVELOPING WITHOUT DISHES.—Mr. J. H. M'Corkle is an American worker of note who is obliged to do most of his photography away from home, and he develops, not all, but a large proportion of his negatives without any dish. He says (in *Photo-Miniature*, No. 49):—

Digitized by Google

"First wet your plate in water thoroughly so that the developer will spread rapidly. Having done so, saturate the cotton (cotton-wool) in the developer, and beginning at centre of plate, circle to the edges rapidly, then go across the plate each way clear to the edges. After you have covered the plate thoroughly, wait about a minute, then repeat the operation. Soon the image will appear, and here is where the advantage of this method comes in. If one part develops faster than another, hold the plate so that the developer will drain from that part on to the slower developing portion of the plate, and with the cotton swab the backward part of the plate until it develops up to the density of the more rapid part.

"If there are dense parts which still hold back, rest the fleshy part of your palm under the sunk place in the negative, and the warmth of your hand will hasten local development.

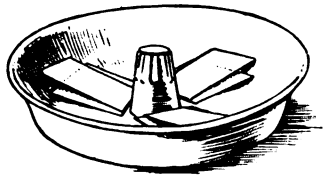
"Having fully developed the plate, wash it under the tap or in the bowl and then cover it with hypo solution in the same way, being very careful that the cotton does not press on the emulsion too hard, as by this time the gelatine is somewhat soft and liable to be scratched. A good way is to saturate the cotton in the hypo and squeeze it on to the plate when laid flat on the wash-stand. When the plate is cleared, wash under the tap. With this method I find no trouble in developing six $8\frac{1}{2} \times 6\frac{1}{2}$ plates in an hour and a half."

BRINGING HOME PLATES UNFIXED.—A very excellent but little used plan is to defer fixation entirely until the return home. The plate, however, may be developed and even printed so long as traces of developer left in it after a short washing are rendered inert; the action of moderate light on the plate is next to nothing. Potass bromide or an acid solution of alum may be used; the former in 10 per cent. solution, the latter in, say, 10 per cent. solution with 1 to 2 per cent. of citric acid. The bromide is preferable, as with alum the plate must be well washed after development, or stains will result. About five minutes' treatment is enough in either case, the plate then receiving a very slight rinse.

Prints on bromide or gaslight paper can be taken from the negatives either before or after drying. If from the wet negative, the paper is soaked in water and squeegeed in contact in the usual way.

WASHING PLATES.—Very little water will suffice to wash a few plates if properly used. Recollect this:—That a series of four or five short (five-minute) soaks will remove almost all the hypo from the film. It may be well to arrange the fixed plates all night in a washing basin, films downwards in the water, so that the hypo can diffuse downwards from them. A brief rinse in the morning and they can be set up to dry. But half an hour devoted to keeping the water changed frequently will answer every practical purpose. The negatives can be given a thorough washing on return home.

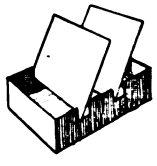
THE WASH-BOWL AS A PLATE-WASHER.—An ordinary wash-hand basin will wash several plates if they are arranged face downward and as nearly horizontal as possible, with a tumbler or shaving-



mug in the centre of the basin to prevent the plates sliding over each other. Two layers can be kept separate by laying the first with the sides of the plates to the tumbler, and the second with the ends of the plates in the same direction.

HYPO-ELIMINATORS, such as hypax, iodosol, anti-hypo, and Burroughs Wellcome's percarbonate, are worth taking, on the chance of washing facilities being impossible. One or two plates should be tried before departure, as these eliminators do not act properly unless used in a particular way.

DRYING NEGATIVES can be hastened by the usual methods with spirit or formalin, but usually one does not want to be bothered with these chemicals, and takes care to set the negatives in a draught where they will dry quickly. The figure shows how to convert a plate-box lid into a rack.



ON THE CONTINENT—LABELS FOR PLATES, FILMS, ETC.

English.—Photographic plates—sensitive to light.
French.—Plaques photographiques sensibles.
German.—Photographischen Trockenplatten. Sehr lichtempfindlich.
Spanish.—Las placas fotograficas sensitivas.
Norwegian.—Fölsomme fotografishe Plader.
Italian.—Piastro fotografiche sensitive.
Swedish.—Ljuskänsliga fotografiska plåtar.

A DIRECTORY OF DARK ROOMS, published in *The Photogram* for June, 1904, shows that there are at any rate 3,000 dark rooms at the disposal of tourists, in many instances for development as well as changing. The list probably does not exhaust the total number, but nevertheless covers almost every

Digitized by Google

town and pleasure resort in the United Kingdom, and in most of the latter on the Continent.

(Additions and corrections will be welcomed.—EDS., *The Photogram.*)

BRITISH MANUFACTURES ON THE CONTINENT.—In collecting information from plate-makers in this country as to the sale of their products in leading tourist resorts on the Continent, the reply of the firm whose goods are probably more sold than any other was:—"We think that the best advice a writer can give to the owner of an English camera is to recommend him to take his supplies with him in the shape of either plates or flat films." This sound advice we strongly endorse. After all, the bogy of weight (in the case of plates) is a bogy and nothing more. A gross of quarter-plates weighs 10 lbs.; of half-plates 27 lbs. "A big addition to one's luggage," sighs the tourist. Yes; but you don't carry your luggage a hundred yards between Charing Cross and Lucerne or Killarney. Most probably you don't carry it a single yard. Wherefore, why take chances on obtaining supplies of your customary brand, or on the freshness of that supply? However, certain information supplied by the plate-makers may ensure the traveller that he will not be cut off from British supplies whilst abroad.

The following plates are obtainable in common English sizes from photographic dealers in the larger Continental towns:—Lumière, Warwick, Cadett, Barnet, J. H. Smith (Zürich).

Prices are usually somewhat higher than in England.

The following plates are obtainable in *Continental* sizes from dealers in the larger towns on the Continent:—Ilford, Lumière.

The plates of Dr. J. H. Smith & Co., dry-plate makers, Zürich, are obtainable in the sizes $6\frac{1}{2} \times 9$, 9×12 and 13×18 cm., everywhere in Switzerland. Any English or Continental size of their ordinary or orthochromatic plate can be obtained from Dr. Smith's factory, Zürich-Wollishofen.

ROLL FILM.—Kodoid plates and roll films are obtainable in all popular English and Continental sizes up to 7×5 in. in the chief Continental resorts, at prices slightly higher than in England.

Wellington film is obtainable in all sizes on the Continent.

BRITISH SIZES FROM CONTINENTAL PLATES.—The Continental $12 \times 16\frac{1}{2}$ cm. plate is exactly the same as our English half-plate, but the popular small size, corresponding to our quarter-plate, is 9×12 cm., slightly larger than quarter-plate. The following notes on what a tourist driven to desperation had best do, I owe to the courtesy of Dr. J. H. Smith, dry-plate manufacturer of Zürich:—"The best way to get quarter-plates would be to buy $12 \times 16\frac{1}{2}$, cut 1·2 cm. from the width and then divide the length into two parts.

"5×4 in. could be cut from 13×18 cm., getting a quarter-plate in addition. As 5 in. = 12·7 cm. and the exact plate-width is generally 12·85, it might not go in the slide.

"In making any calculations you must not forget that all Continental slides are made of exact size and the plates have to be made 1 to $1\frac{1}{2}$ mm. smaller to fit; whereas in England the reverse is the case: the plates are made exact size and the play has to be left in the dark slides.

"Whole-plate would require to be cut out of 18×24 cm. size if not in stock, but this would give considerable waste.

"Our factory can always deliver the English sizes promptly, and this is the best plan to adopt in case of urgency. It is possible, for instance, on receipt of a telephonic or telegraphic message from Geneva in the course of the forenoon, to deliver in Geneva by the following mid-day by post, and here is the advantage in Switzerland of being able, per post, to send on the pay-on-delivery or 'Nachnahme' system, which is a great convenience to the customer."

PHOTOGRAPHING FROM MOVING VEHICLES.—Mr. Kilbey, in his *Advanced Hand-Camera Work*, advises a speed of shutter not less than 1-250th of a second when exposing from a moving 'bus. The high speed is needed owing to the vibration from the usually "bumpy" road. From the 'bus travelling over asphalt, or from a tram, the shutter may be worked at 1-150th. If exposing in the direction the 'bus is travelling, select the right hand front seat on the off side: if from the rear, the last seat on the near side. "If you remain seated while the exposure is made, the precaution must be taken to sit on the edge of the seat and not to allow the back or arms to come in contact with any part of the 'bus. When standing, you must endeavor to do so with your knees slightly bent, so as to give or take in the jolting of the 'bus."

Exposures from railway trains and steamers can be made with much greater hope of success, because the vehicle moves smoothly and the objects are more distant. An exposure of about 1-40th of a second is sufficiently rapid so long as objects close to the train are not included. Open views of coast or mountain which one gets from the carriage window are the ones to aim at. Needless to say, the side of the carriage unobstructed by telegraph wires must be chosen, and the camera held firmly in the usual way as one leans out of the window. A direction forwards or backwards on the train's line of motion is better than one at right angles to it in point of getting sharp pictures.

Digitized by Google

AN OPEN LETTER ASKING FOR PERMISSION TO PHOTOGRAPH.

ENGLISH.

Sir,

May I have your kind permission to photograph..... ....., at the time most convenient to you? I am an amateur photographer, and desire to obtain this souvenir of my visit to..... .....—Believe me, sir, yours faithfully,

FRENCH.

Monsieur,

Etant un amateur de photographie, je vous serai très reconnaissant si vous voulez bien m'accorder la permission de photographier..... .....; à l'heure qui vous dérangerait le moins dans la journée. En m'accordant ce que je vous demande, vous obligerez un amateur qui fait de la photographie pour l'amour de l'art et qui désirerait garder des souvenirs de son passage à..... Veuillez agréer, Monsieur, mes salutations distinguées.

GERMAN.

Geehrter Herr!

Wollen Sie gütigst gestalten eine Photographie aufzunehmen....., zu einer Ihnen am besten convenierenden Zeit? Ich bin Amateurphotograf und möchte gern ein Andenken an meinen Besuch in ....sichern.—Im voraus bestens dankend zeichne, mit aller Hochachtung!

ITALIAN.

Signore,

Mi dareste voi il gentile permesso di fotografare.....nell' ora che meglio vi accomoda? To sono un dilettante fotografo e desidero ottenere questo ricordo della mia visita a.....—Credetemi vostro devotissimo,

"THE PHOTOGRAM" TOURIST'S VOCABULARY.

ENGLISH.	FRENCH.	GERMAN.	ITALIAN.
Have you a dark room here?	Avez-vous un laboratoire pour la photographie dans votre maison?	Haben Sie ein Dunkelzimmer?	Avete voi una camera oscura?
I wish to change some plates.	Je désire changer mes chassis.	Ich möchte Platten wechseln.	Desidero cambiare delle lastre.
Can I develop?	Puis-je développer mes négatifs?	Kann ich hier entwickeln?	Posso sviluppare?
I want some fixing bath.	Je désire un peu de bain fixateur.	Ich brauche etwas Fixierbad.	Ho bisogno di un bagno di fissaggio.
The light is too bright.	La lumière est par trop vive.	Das Licht ist zu stark.	La luce è troppo forte.
How do I fasten the door?	Comment faire pour fermer la porte?	Wie sichere ich die Thür?	Come posso io otturare la porta?
Don't come in: I'm not ready.	N'entrez pas: Je ne suis pas prêt.	Nicht hereinkomen: bin nicht fertig.	Non entrare! Non sono pronto.
I will leave the negatives to wash.	Je laisse mes négatifs se laver.	Ich lasse die Platten zum Waschen.	Lascio le negative nell' acqua per lavarle.
Will you take them out to dry?	Voulez-vous les mettre dehors pour sécher?	Wollen Sie dieselben zum Trocknen herausnehmen?	Vorreste voi farle seccare
And take one print from each?	Je veux imprimer une épreuve de chacun?	Und je einen Abzug machen?	E stampare una copia da ognuna?
Have you "The Photogram" Directory of Dark Rooms?	Avez-vous le guide du "Photogram" indiquant les laboratoires pour la photographie?	Haben Sie das "Photogram" Addressbuch der Dunkelzimmer?	Avete l'elenco delle camere oscure pubblicato dal giornale "The Photogram"?
(1) Dish.	Cuvette.	Schaale.	Bacinella.
(2) Measure.	Mesure graduée.	Mensur.	Bicchiere graduato.
(3) Hypo.	Hyposulfite.	Fixiersalz.	Iposolfito.
(4) A piece of cardboard.	Un morceau de carton.	Ein Stuck Carton.	Un pezzo di cartone.
(5) Towel.	Serviette.	Handtuch.	Tovaglia.
(6) Bromide.	Bromure.	Bromkali.	Bromuro.
(7) Developer.	Développateur.	Entwickler.	Rivelatore

Digitized by Google

LIABILITIES AND PRIVILEGES—THE LAW OF TRESPASS.

BUILDINGS, LANDSCAPES, etc., which can be seen from any public place (road or footpath) may be photographed without permission from anyone. An architect or an owner cannot prevent his house being photographed; and the fact that a man has photographed a certain view and registered his copyright therein, does not prevent another man photographing the same view from the same spot.

THE POLICE.—Local authorities can prevent or restrict photographing in areas (such as parks, open spaces, etc.) which are controlled by special bye-laws; but in the public streets and pathways, on bridges, etc., even they can only interfere if the photographer becomes an obstruction or a nuisance, or attempts to make sales (when he becomes a hawker). As a member of the public, lawfully using a public place, the photographer is not only free from molestation by the police, but is entitled to their protection and assistance, so long as he does not interfere with their regular duties. It is thus a duty of the police to "move on" loafers who insist on getting into a view when the photographer does not want them, or even to stop the traffic long enough for an exposure to be made, if satisfied that the stoppage is not unreasonable. In any small matter, the policeman will usually give his help most cheerfully if courteously approached; but if one has to do a great amount of work in a busy city and at busy times of the day, it is well to apply to the head of the police for a special authorisation which can be shown to the officers on duty. This will only be given if the work is being done for some important purpose.

FORBIDDEN PLACES.—Photography is generally forbidden in the neighborhood of modern fortifications, in naval building-yards, and especially where experimental building or manœuvring (as with submarine boats) is being conducted. For these places permits are not given; and the fact that people are allowed to wander at will, is no proof that photographing will be tolerated. Certain Continental countries are much more particular on this point than are the British authorities, but even in England amateur photographers have been arrested and their plates confiscated because they were supposed to include some fortification of interest. On the Continent the usual rule is to forbid photography in any place within about three miles of a fortification, from which the fortification is visible. In certain harbors, river mouths, and other picturesque places where the ordinary man would see only an old town and ancient castle, photographing is objected to, because the castle is surrounded by modern defensive works, which may not be very obvious, but to which some importance is attached. This trouble occurs in few places save on the seacoast and on frontiers.

TRESPASS.—As photographers often need to step into enclosed grounds — in some cases when there is no chance to ask permission—it is well to remember that in England they cannot be prosecuted for trespass (*per se*) in spite of the frequency with which we see notices that "trespassers will be prosecuted." A landowner can only secure a conviction if he proves damage, or that you were "in search of game," "in pursuit of conies," or "for a felonious purpose." The fact of your carrying camera, etc., and being an amateur photographer, makes clear your "purpose," so that the only ground for a prosecution is damage. Remember this, in case an unreasonable or offensive landowner, farmer, or keeper appears. If you have done absolutely no damage, offer a polite apology. If you have broken the fence or trodden down mowing-grass or other crop, offer your apology and say that you are prepared to pay for the actual damage done. You will then have a clear and good case, even if he should take you into court, and, especially if you have a witness, you may feel satisfied that he cannot obtain a conviction, and that therefore he will have to pay the costs, a state of things which will usually calm the most irate countryman, if politely explained to him.

MAPS AND GUIDES.—Among maps there are none better than Bartholomew's "Half-inch to the Mile" of England and Wales and Scotland (J. Bartholomew & Co., Geographical Institute, Edinburgh). Roads are distinguished as Main roads, Secondary roads, and Footpaths. Altitudes are indicated, and driving and cycling roads are shown in brown. Inns and hotels are marked, as are also fishing streams, lochs, woods and forests, antiquities, etc. Each sectional map measures 20 by 30 inches and costs 1s. in paper, 2s. in cloth, or 2s. 6d. on cloth, dissected. This series of Messrs. Bartholomew's maps are obtainable at Smith's railway bookstalls.

G. W. Bacon & Co., Ltd., 127 Strand, London, W.C., issue a series of Bartholomew's maps arranged to give the district within a 40-mile radius from a series of some fifteen centres. Each map is 26 by 36 inches, and shows good cycling and motoring roads, distinguishing between danger and caution hills.

The Ordnance Survey maps are published by Edward Stanford, 12-14 Long Acre, W.C. They are 1 inch to the mile, twice the size of Bartholomew's for a given area; the smaller scale is preferable. Mr. Stanford's "Catalogue of Maps and Books for Tourists" is worth getting for its list of guides, and especially of maps of the Continent.

Maps for tourists are a specialty of George Philip

Digitized by Google

& Son, 32 Fleet Street, E.C., who list a large European series and others in different parts of the world.

"Strip" maps, arranged to give the district on either side of the route between certain places, are issued by Gall & Inglis, 25 Paternoster Square, London, E.C. The "Contour" road book of the same publishers is an excellent arrangement of sectional maps in book form.

Bartholomew's maps are issued in a form very convenient for cyclists and motorists by Wallis Bros., Kettering. The map is in long strip, which is mounted in a sort of roll holder, being wound to and fro under a celluloid window which affords a view of a considerable district. The lengths, showing country east or west of that in any given strip, overlap, so that when a route is being pursued there is no difficulty in starting afresh on the next section.

ON PHOTOGRAPHING VARIOUS SPECIAL SUBJECTS.

UPRIGHT OR OBLONG.—The upright or "portrait" form of picture is best suited to subjects in which the lines are principally vertical,—an avenue of tall trees, a group of poplars. But the "oblong," horizontal, or "landscape" arrangement is best for subjects in which the lines run horizontally, cedars with their spreading layers of foliage, lake, river, and other scenes with a clear horizon. The "upright" shape favors the idea of life and vigor: the "oblong," peace or decay.

WIND is suggested first by the bent branches of the trees, and by slight diffusion in the definition of the foliage. Also, by a low horizon and plenty of cloud above it. If your scene is high ground, contrive to have some object projecting from below on to the skyline to thus suggest the height. As regards exposure, the necessary definition (or want of it) in the foliage or light bare branches is best obtained by an exposure of several minutes. A second or two will simply *demonstrate* the movement by showing several images of the moving leaves or branches, but longer exposure *suggests* wind by making a haze of them, and as there is one position to which the bigger branches regularly come back, we get a fairly sharp negative of the main outlines. A slow plate and a small stop will permit of this long exposure.

SUNSHINE EFFECTS usually mean softness. A man's figure between you and the sun is black, but notice the shadow cast by it, and you will see it is light and plainly shows all the detail of the roadway. That ample rendering of detail in the shadows of sunlit scenes has been greatly ignored. There are other ways of conveying the effect of sunshine, but this luminous detailed shadow everywhere is the chief. The reasons why so few prints of summer subjects show it are:—That exposure is cut down (because the light is so bright): that orthochromatic plates are not used: that, for these and other reasons, the negative has an insufficient scale of tones. Exposures, to get the sunshine effect, can be several times what is thought right for "a plucky negative," and development should not be pushed so far as to lose the softness of the contrasts.

WET BRIGHT WEATHER, especially in towns, affords effects in the way of reflections which require this same softness to be kept in view. Wet streets and roadways look their best when photographed "against the light," *i.e.* with the sun facing the camera, but not directly shining on it. Bright light diffused by clouds gives the best results, and to preserve the wetness and atmosphere of the subject, a full exposure and a thin negative are the two necessaries. Actual rain at the time of exposure does not matter at all, and is not recorded on the plate.

MIST AND HAZE are often an accompaniment of wet-day scenes, and not infrequently may be missing in the negative, owing to errors of exposure and development. A hint as to the latter comes from John Beeby, of New York, with whom this kind of subject has long been a favorite.

It is to commence development with a small proportion of developer proper and a large proportion of alkali, and to continue with this until the distance and middle distance appear sufficiently clouded over. The plate is well rinsed, and the normal developer applied to impart the required degree of pluck to the foreground. A simple method of thus varying the development is to compound the formula, so as to require three parts of developer solution to one of alkali, and to reverse these proportions in the first stage of development. A suitable formula is:—(A) Metol, 45 gr.; soda sulphite, 1 oz.; water, 10 oz. (B) Potass carbonate, 1 oz.; soda sulphite, 2 oz.; water, 10 oz. At first use:—A, 1 part; B, 3 parts. Afterwards:—A, 3 parts; B, 1 part

FOREGROUNDS, which contain the principal interest of the picture, should be tried with a lowly placed camera. The result is often incredible. Reeds or grasses obtain greater prominence, and where water enters into the picture, it is brought into a moderate proportion instead of spreading over the picture, as it frequently does. Such "foreground" pictures can do with a horizon line one fourth to one third the height of the plate from the upper edge

GLENS AND WOODLANDS must frequently be taken with a wide angle lens, and so care is needed to avoid big objects in the foreground which would dwarf the distance. Dull, or even rainy, weather is better than sunshine, and the plates ought to be isochromatic and backed. Focus your foreground carefully,

Digitized by Google

but don't stop down until every bit of detail behind it is sharp. You lose the atmosphere and feeling of the place by so doing. *F* 16 is small enough for any occasion. Do not stint exposure. It is much easier to give too much than too little, and there is no need to think that you are out of it altogether if your exposure works out to more than a minute.

BIRCH AND BRACKEN, according to W. Thomas, who at one time photographed these features of Yorkshire or Kentish landscapes a good deal, are in great danger of being badly rendered from closing up of the planes of the picture. The view, so attractive in itself, looks choked up when the negative comes to be printed. The tendency to include too much on the plate—a too wide angle lens—is not the sole cause of this. The "ordinary" or color-blind plate is another, for it will not record the rich contrasts of color in the scene—deep browns and purples with the green of the grass and the light trunks of the birches. These differences, so evident to the eye, produce almost the same effect on the photographic plate. Hence an orthochromatic plate and yellow screen are as essential as a narrow angle of view. In regard to this latter, if you have not a lens of long focus on your camera, arrange the picture to occupy the centre part of the plate, and aim at enlarging afterwards, for which purpose keeping the negative thin and soft.

The best time of year for birch and bracken studies is from the end of September or beginning of October up to March or April in the following year.

Generous exposure is one other secret of success with birch and bracken. It is much easier to give too little than too much. The light need not be from the unclouded sky: in fact, strong contrast—the difficulty of these subjects increases with the brightness of the light. When photographing in strong sunlight, one can arrange for the scene to be behind the camera, thus toning down the contrasts which are sufficiently great in the subject. Even after development, persulphate or redevelopment may be usefully applied to bring the negative to the requisite degree of softness.

SKIES AND CLOUDS.—I put skies first, because the photographer's tendency is to select chiefly the beautiful but heavy cumulus clouds for the embellishment of his pictures; and the subjects with which they can be suitably mated are not by any means so numerous as those which require a quiet unobtrusive sky. Says the Rev. F. C. Lambert in an article on cloud photography in *The Photogram*:—"We do not wish the spectator's eye to be first attracted by the clouds nor to be retained by them, but rather that the clouds shall be a part of an undissolved whole; or, as our friend from Dublin puts it, 'You only ought to think of their presence when they are absent.'" And another point as to which clouds to choose:—Avoid those high above the horizon. The general notion about photographing clouds is that you set up the camera on a hill and tilt the tripod to include clouds from horizon to zenith. But clouds differ in shape according to their height in the heavens, and therefore the most generally useful are those nearest the horizon.

The focal length of the lens may be more, but should not be less than that used for landscapes. There are cases where a much greater focal length is desirable, as when photographing a bright sunset sky "against the light." The reason for this is given under "BY MOONLIGHT."

An iso plate and yellow screen are better for every kind of cloud, and for all, except cumulus and heavy storm clouds, almost a necessity. But it is easy to abuse the power thus afforded of bringing out the clouds from the background of blue sky. For pictorial purposes hard definition of the cloud forms is to be shunned, for it destroys the impression of distance which the cloud conveys by reason of its soft and hazy outlines.

For the same reason a medium stop, *f*/8 or *f*/16, should be used, and exposures with an iso plate and a medium screen will then run into *about* 1-20th of a second (*f*/8) in the brightest summer mid-day light.

CLOUDS AND LANDSCAPES ON ONE PLATE.—In obtaining cloud (or sky) and landscape at one exposure one must have resource to some means of screening the light from the sky during part of the exposure. For doing this I know of nothing better than the cheap "Window" shutter made by Mr. Tylar of Birmingham. By pulling a string one blind is raised and another drawn down as soon as the first has uncovered the lens. You can make a note, when focussing, of where the blind must be to screen the sky, and when exposing arrest it at this point for a good part of the time; or a screen of brown paper can be fixed across the shutter at this point and removed before exposure is finished. Of course this applies only to time exposures. In instantaneous work the sky must take its chance, though it has been claimed for the focal-plane shutter that it can give less exposure to sky than to foreground.

A method of the old school, which did not grudge an hour spent over the development of a plate, was to bring up the clouds with a solution strong in the developer and restrainer (pyro and bromide), but with very little alkali or accelerator, say:—Pyro, 3 gr.; bromide, 3 gr.; ammonia, half a minim; water, 1 oz. In this the clouds appear and when they are properly out, but still thin, the plate is *thoroughly* rinsed under the tap, and a developer, made up the other way about, poured on; that is, weak in pyro

Digitized by Google

and bromide, but with the alkali in full measure, *e.g.* pyro, ½ gr.; bromide, ½ gr.; ammonia, 6 minims; water, 1 oz. Here the landscape rapidly appears and develops up with sufficient vigor, thanks to the preliminary application of the stronger developer.

INTERIORS.—The wide angle lens so much abused in interior work demands a special mention in the shape of a caution to arrange matters so that the subject lies as much as possible in one plane at right angles to the line of sight. In the case of an aisle or chancel which must be taken at a wide angle, endeavor to take the view sideways, as far as possible. You thus avoid the appearance of violent perspective, and also the obvious distortion of columns or buttresses, which occur when these fall in the margins of a wide angle picture!

In outdoor architectural views also, beware of corners of buildings projecting towards the camera.

When focussing in dark interiors, a lighted candle, or a wax vesta at a pinch, can be used as a test object when focussing, and also (by moving it about the building) to show exactly how much is being included on the plate. When focussing, place it between the prominent object in the camera and the most distinct part of the subject—but nearer to the foreground object than to the distant one. If you are a precise person you can place it one third of the way from the nearer object towards the further one; that is to say, if the foreground is 25 feet from the camera and the far distance 30 feet further, the candle will be set at 35 $\left(25+\frac{30}{3}\right)$ from the camera.

On exposure in interiors Mr. Walter Kilbey, in his *Hand-Camera Photography*, advises:—"Focus on the middle distance with the largest stop, and then with your head under a black focussing cloth, stop down until you just begin to lose sight of detail in the dark parts. At this degree of stopping down, the exposure with 'quick-medium' plates will be from eight to nine minutes. Of course you need not use this stop if a larger or smaller one is better, but the exposure must be doubled for every stop smaller, or halved for every stop larger."

"Two-stop" exposures—*i.e.* for the first three quarters of the time with a small stop, and the last quarter with a large one—have been given with the object of saving time and giving a roundness and softness to the negative. The method has been praised for its rendering of atmosphere and distance, but I cannot speak of it from experience.

Dark corners of interiors of moderate size can be much helped by burning a little magnesium ribbon. Pocket lamps to carry the ribbon are obtainable, one by B. J. Edwards & Co. being a very handy pattern. About a foot of magnesium ribbon (moved about all the time) may be named as roughly sufficient for a rapid plate at *f*/11.

In the absence of feet for the tripod, or a stay, the troubled photographer turns to hassocks as a means of placing the tripod so that it will not slip. A caution here! Heavy cameras thus mounted have been known to sink steadily during the exposure, the tripod points gradually penetrating the hassock or cushion.

Photographing ceilings by setting the camera on the floor, lens upwards, is plain sailing when once the subject has been placed on the ground glass and focussed. This can be done by first estimating the distance from floor to ceiling. A useful standard by which to measure is the height of a man, it being fairly easy to judge how many men would need to be stood on one another to reach the roof—and then pacing off this distance from one of the walls. The camera is now focussed on the wall, the slide inserted and, without altering the focus, placed in position for the ceiling, and exposure made. When adjusting the focus, a very fair idea of the subject included can be obtained by comparing the area of wall, visible on the focussing screen, with that of the ceiling around the spot beneath which the camera is placed.

TOMBSTONES.—What has been said above refers equally to these subjects, as does also the necessity of taking steps to get relief in the lettering, of which mention is made in another paragraph. One difficulty is to bring out one tombstone in a churchyard prominently above the others. A short-focus and large-aperture lens does so at the sacrifice of nice perspective (which, however, does not usually matter much); but I have heard of photographers taking such heroic measures as persuading an attendant to burn rubbish behind the tomb so that the smoke might cast a haze over the surroundings. Practically the same result can be obtained by holding back the surroundings during printing by colored varnish on the glass side of the negative.

Lack of space compels us to curtail this section of the present monograph at this point, but the excluded notes appear in the pocket edition of Photography on Tour. *They deal with the photography of buildings in crowded streets, mountains, Alpine scenery, flowers, seascapes and breaking waves, yachts, street-life, animals, night scenes, as well as the use of the camera on horseback, from moving vehicles, in zoos, by moonlight, etc.* Photography on Tour *is issued by Messrs. Dawbarn & Ward, Ltd., at one shilling and two pence, post free.*

Digitized by Google

FIG. A. (see Table I.).—Open landscape.

FIG. B. (see Table I.).—Landscape, heavy foreground.

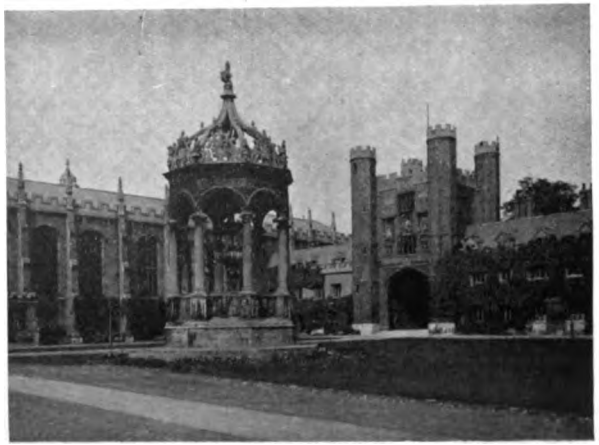


FIG. C. (see Table I.).—Dark buildings.

FIG. D. (see Table I.).—Shaded river scene.

Digitized by Google

A TABLE OF EXPOSURE.

The figures given below are to be used between 10 a.m. and 3 p.m. in May, June, and July when there is bright sunshine and a blue sky, and when an ultra-rapid plate is being used. At other hours and dates multiply these figures by those in Table II.; in other weather by those in Table III., and for other plates by those in Table IV.

TABLE I.

	Open Panoramas. Ships at sea. Snow scenes.	Open landscape (*i.e.* with light foreground) Open lake, river, and beach scenes. See fig. A.	Landscape with heavy foreground. Street scenes. Dark buildings. Shaded river scenes, etc. See figs. B, C, D, E.	Landscape with extra heavy foreground of dark trees, porches, doorways, etc. See fig. F.	Woodlands. In glens, avenues, and generally under foliage. See fig. G.
F/4	1-600th	1-300th	1-120th	1-60th	1-10th
F/5·6	1-300th	1-150th	1-80th	1-40th	1-8th
F/8	1-150th	1-80th	1-40th	1-20th	¼
F/11	1-80th	1-40th	1-20th	1-10th	½
F/16	1-40th	1-20th	1-10th	1-5th	1
F/22	1-50th	1-10th	1-5th	½	2
F/32	1-10th	1-5th	½	¼	4
F/45	1-5th	½	1	2	8
F/64	½	1	2	4	16

FIG. G. (see Table I.).—Woodlands.

TABLE II.

For times other than from 10 to 3 in May, June and July, multiply by the figures in this table.

A.M	P.M.	June	May July	April Aug.	Mar. Sep.	Feb. Oct.	Jan. Nov.	Dec.
	12	1	1	1½	1½	2	3½	4
11	1	1	1	1½	1½	2½	4	5
10	2	1	1	1½	1½	3	5	6
9	3	1	1½	1½	2	4	12*	16*
8	4	1½	1½	2	3	10*		
7	5	2	2½	3*	6*			
6	6	2½	3*	6*				
5	7	5*	6*					
4	8	12*						

Calculated by Dr. A. A. Scott. This table is for use only in countries in the latitude of the British Isles (i.e. North Germany, Canada, etc).

* Yellow evening light requires these numbers to be increased several times (5 or more) unless Iso plates are being used.

TABLE III.

In weather other than sunshine with blue sky, multiply the exposures in Table I. as follows:

Bright diffused light. — The sun behind a cloud. — by 1½

Cloudy. — The whole sky covered with light clouds, leaving the light bright enough to cast a distinct shadow. — by 2

Dull. — Heavy clouds over the whole sky. No distinct shadows. — by 3

Very dull. — Almost gloomy The sort of weather in which photography would be attempted only unless absolutely necessary. — by 4 to 5

An interior, which by its very deep shadow may greatly deceive as to the exposure required.

Digitized by Google

FIG. E. (see Table I.).—Street scene.

FIG. F. (see Table I.).—Landscape with extra heavy foreground.

For sky, clouds, and open sea, give half the exposures in the first column—"Open Panoramas." For interiors, see hint under "Photographing Various Special Subjects."

Table IV. For plates slower than those in Table I. multiply by the factors given below.

Extra rapid (180–200, Watkins; *f*/90 Wynne, about)	1½ (half as much again).
Medium (120–140, Watkins; *f*/56–*f*/64, Wynne)	2
Ordinary (45–60, Watkins; *f*/32–*f*/45, Wynne)	5

I give these tables as *a rough guide* to satisfy those who must have some such help, but I adopt and advise the use of a Watkins or Wynne meter.

EXPOSURE MATTERS.

UNDESIRED FIGURES who will persist in posing on the field of view can be frustrated in several ways with more or less success.

For children an eminently satisfactory arrangement is to gather them so closely round the tripod that the lens misses them altogether, though they are pleased in believing that they occupy the forefront of the picture.

Stolid laborers can sometimes be got to pose: or you can suspend operations until they depart: or you can stand them a drink.

A dummy lens on the side of the camera is another device. It is manipulated so as to induce the would-be subjects to come over in front of it, when the plate can then be exposed by the real lens. But keep this for rural and foreign districts: the urban youthful person knows too much about photography to be taken in by it.

When all is ready for exposure it is sometimes sufficient to draw the focussing cloth over the head and make as though taking the picture in the opposite direction. The onlookers will move across, or may be persuaded to do so, and then the view can be quickly exposed.

UNWILLING SUBJECTS who object to act as models in figure-study work in their workaday clothes can usually be induced to do so on the basis of a separate portrait of them in "their best things."

Eastern prejudice against the camera has been eluded by the device of a dummy lens, the camera being really pointed in a direction at right angles to its apparent one. But the best way of working on this system is with a reflex camera with a mirror in front of the lens, at 45° to the optical axis. An accessory of this kind, made by the late A. M. Geddis, was described in *The Photogram* for August and September, 1902. It is easily fitted to any reflector camera.

Digitized by Google

MOUNTING THE EXHIBITION PRINT

BY FREDK H. EVANS.

This series of progressive lessons in the modern border-mounting of prints, which commenced in the January number of The Photogram, *is continued each month throughout the year. The instruction is given in reference to an actual example to be mounted by the reader on the paper, or papers, of the covers.*

This month's exercise.—Print:—"The Crinoline," by David Blount. Mounting Papers:—Lindenmeyr's "Genova" (this month's covers), "Stone" (May covers), and "Nut Brown" (April covers).

THIS month brings us a very interesting and clever picture by Mr. David Blount; it was shown at the Salon under the title of "The Crinoline." Those of my readers who have memories of "The Sixties" and the quaintly ugly dresses ladies then accepted because fashionable, will especially enjoy this clever reminiscence of that period; it will also bring to mind, and would make a good illustration for, Pinero's play, "Trelawny of the Wells," produced not so very long ago.

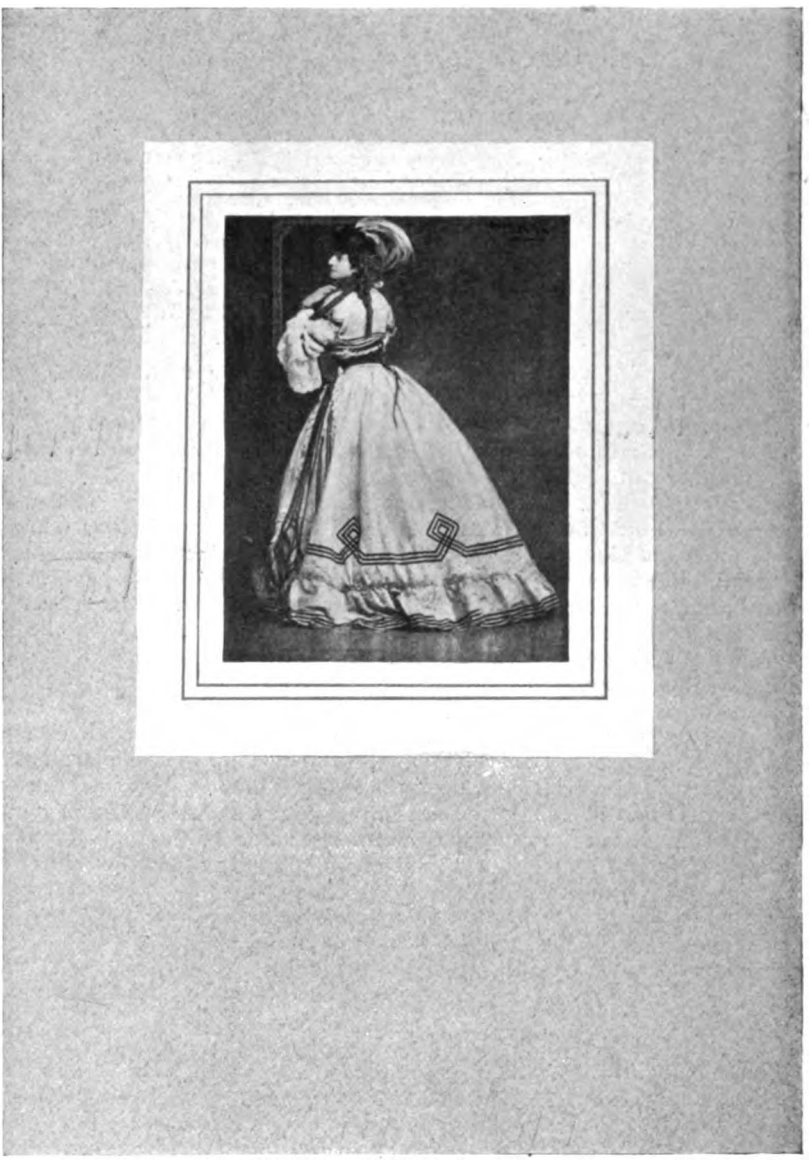
The presence of the picture frame on the wall of the background suggested the inner frame of double lines in brown, while the main, the bottom, mount of Genova paper was chosen as it so well suits all subjects of a drawing-like nature. I had not in this case the original gum-print to deal with, but a black-and-white reproduction only. The stone paper was chosen as a softly harmonious neutral shade agreeing equally with the dark background of the picture and the tones of the dress, helping both by contrast and harmony.

By this time the reader is experienced enough in cutting out and mounting the various papers to absolve me from repeating every such detail; it will suffice therefore if I merely give the dimensions of the margins: the Stone paper next the print is to be $\frac{3}{16}$ths at top, $\frac{1}{4}$ inch at sides, and the same at bottom. This is placed on the nut brown paper, and that trimmed away to a narrow line, but not too narrow, or its value will not be felt in the completed scheme. This is next placed on a further piece of the Stone paper and that trimmed to $\frac{1}{8}$th inch all round. A second brown line is then added, as before, and this now placed on a third piece of the Stone paper, trimmed to $\frac{7}{16}$ths at top, $\frac{1}{2}$ inch at sides, and $\frac{3}{8}$ths at foot. The whole is now ready to be placed on its final support, the Genova paper forming the covers for this month, to proportionate margins as shown in the block on p. 200.

It may be asked why I chose the brown as a color for the fine lines instead of black, as the picture is in black and white. Black lines, however, on the soft Stone color would have been far too assertive and obvious; lines were needed, but only definite enough to be felt *as* lines; color *as* color was therefore inadmissible, and as black would have been very pronounced and felt *as* black, this delicate brown seemed the very thing, being neutral and harmonious to both the soft Stone and the character of the picture.

"The Photo-Miniature" with its sixty-first number commences a new period in its active and useful career, with a modified design of cover, a new style of type and paper, and a generally improved production. This number is from the pen of A. Horsley Hinton, and devoted to "Methods of Control in Pictorial Photography."

Digitized by Google



MOUNTING THE EXHIBITION PRINT.

Scheme of Mounting as directed by Mr. Evans on the previous page.

Digitized by Google

THE CRINOLINE. *By David Blount.*

To be cut out and mounted as directed on page 199.

"Shining Lights," by Thomas Bedding; price 1s. net (London: Strangeways & Sons).—Those who have heard Mr. Bedding, either as an after-dinner orator or as a speaker on any subject in which he takes a real interest, know him as a man of keen, accurate observation, with a full command of picturesque descriptive language. Such people will need no strong recommendation to buy a copy of Mr. Bedding's latest excursion into fiction. In depicting the characters of Lord Glastonbury and Sir Rupert Gage, Miss Glastonbury and Miss Chantrey, Mrs. Dappleton and Miss Trevaine, Mr. Armesteen and Mr. Fox, Mr. Minter and Dr. Redwood, the two local editors, and Ezekiel Varnick, Esq., M.P., F.R.G.S., Mr. Bedding has drawn upon his fund of observations of life in a small semi-suburban town. His plot is rich in incident, full of surprises, distinctly melodramatic, but well managed throughout; and the story finishes, as all melodramas ought to finish, with the good people well prepared to be "happy ever after," while the bad people have gone to "their own place," or are otherwise safely disposed of. The book is very readable, and should be popular with all who love stirring fiction.

Digitized by Google

Digitized by Google

The "Natural History" Competition.

AWARDS.

1st prize (£1 1s.): "Chromo" (Harry E. Staddon, Goodmayes, Essex). 2nd prize (10s. 6d.): "Rhesus" (William W. Baker, Peterboro'). Honorable mention: "Puss" (Miss E. Collier, Stoke-on-Trent); "Cistra" (Ernest H. Hooper, Chichester); "Ibis" (Henry Walker, Manchester); "American" (Jas. H. Saunders, Leeds); "Tripod" (Miss G. C. Lazenby, Sydenham, London); "Senascens" (Jas. Edwards, Cheltenham); "Khorderi" (W. Candery, Richmond).

In consequence of the pressure on our space this month from tourist matters, we are compelled to hold over the reproductions of the prize and honorably mentioned work until August.

The scoring for the series prize of £5 5s. for the best work sent in throughout the year is not altered by this month's competition, except that Mr. Staddon takes a place among those in the running.

The Mounting Competition.

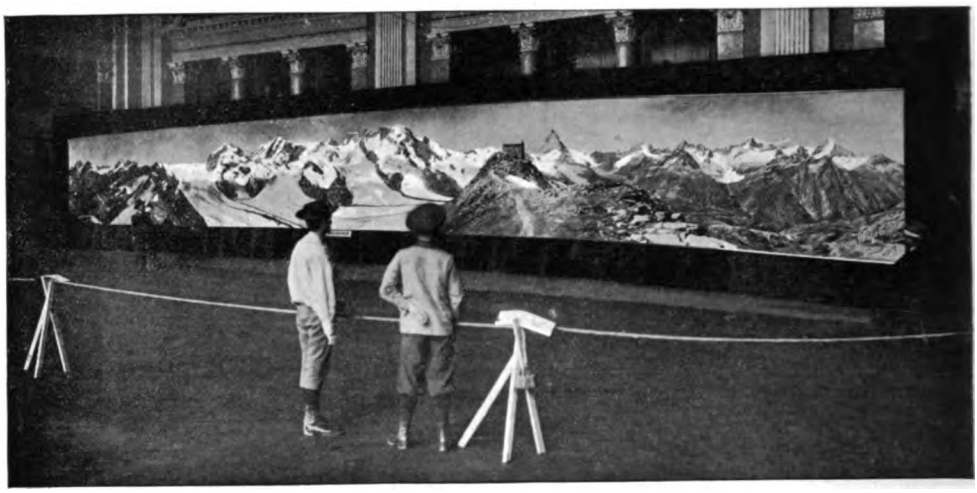
The competition of the month is Mounting. Prizes of £1 1s. *and* 10s. 6d. *for the best mounting of the print, "A Fruit Boat, Venice," by Percy Lewis, presented with* The Photogram *for June. Any scheme of mounting may be adopted. The print may be attached by the corners only or pasted down. The narrow border around the picture may be removed or retained as the competitor prefers, but the picture itself must not be trimmed in any way. Last day, August 1st.*

What's What

"The Book of Photography" (London: Cassell & Co.).—At last it appears we are to have a large work in which the whole story of photography is to be told, not in the prodigious historical detail which a German writer would insist upon, but with commendable emphasis on the practical side of present-day methods. *The Book of Photography*, which promises to accomplish this task, is to appear in about twelve monthly parts, each 7d. net. Part I. briefly reviews the history of photography, proceeds next to a brief elementary treatise which evidences its modern tone by talking freely about films, as well as plates and not omitting daylight development, and finally gets properly started on its encyclopædic mission with a consideration of apparatus and emulsion making. The whole matter occupies sixty-four well illustrated pages, and treats its subjects with satisfactory fulness and clearness. If forthcoming parts are equal to the first, *The Book of Photography*, when complete, will be a volume such as every photographer will bind, and study again and again.

"The First American Photographic Salon" at New York seems, in some respects, a curious and contradictory title, since we were under the impression that at least one photographic Salon has been held in that city. The new exhibition, which is to be in the Clausen Galleries, 381 Fifth Avenue, from the 5th to the 17th December this year, is under the auspices of the recently formed Metropolitan Camera Club of New York and the Salon Club of America. From the social, literary and artistic points of view, the committee, patrons, etc., form a stronger list than has ever been announced in connection with a photographic exhibition. The jury of twenty-one members consists entirely of artists (not photographers), and includes such names as John Lefarge, William A. Coffin, Will. H. Low, and others who are well known amongst painters. The patrons include the Hon. John Hay, Secretary of State, who made so many friends in England during the time that he was ambassador to this country; Senators T. C. Platt and Chauncey M. Depew, the Hon. B. B. Odell, Governor of New York State, the Hon. George M'Clellan, Mayor of New York, Mrs. Vanderbilt, Pierpont Morgan, and a host of others. On the active committee we find the names of Mrs. Jeanne E. Bennett, Baltimore, Mrs. Helen P. Gatch, Oregon, R. W. Shufeldt, New York, Messrs. Fayette J. Clute, San Francisco, J. C. Strauss, St. Louis, Spenser B. Hord (editor of *The Photographic Times and Bulletin*), F. Dundas Todd, Chicago, and many others. The motto of the Metropolitan Camera Club, which has been adopted by the Salon, is a good one and runs "Many schools in art and all good," and the statement in the circular that "no one school or effect will command precedence; the judging will be the artistic quality of each print submitted," is a promising announcement. Evidently the committee is aiming at the great things, and if it secures the support it deserves, the exhibition should have an important effect upon the future of American photography.

Digitized by Google



RIVAL BIGGEST PHOTOGRAMS. "An Alpine Panorama," 70 ft. × 3 ft. From eight negatives, enlarged on to J. H. Smith & Co.'s bromide paper; the separate enlargements mounted without sign of a join.

FORTHCOMING EXHIBITIONS AND COMPETITIONS.

Particulars of Exhibitions are given when first announced, and again when it is time for entries to close. Will secretaries who wish insertion please mention details below, and note that last day is 12th of each month for publication on 25th? The Editors will feel grateful for the Exhibition catalogue as soon as published.

En.=Entries. Pic.=Pictures. Ex.=Exhibition. G.=Gold Medals. S.=Silver Medals. B.=Bronse Medals. O.C.=Open Classes. Sec.=Secretary.

(1) *The Photographic Salon.*—En. and Pic., Sept. 5. Ex., Sept. 16 to Nov. 5. Sec., Reginald Craigie, Dudley Gallery, Piccadilly, London, W.
(2) *Isle of Thanet P.S.*—Ex., Nov. 24 and 25. Sec., G. W. Simmers, 58 Queen, Ramsgate.
(3) *Glasgow Eastern Amateur P.A.*—Ex., Nov. 26 to Dec. 3. 2 O.C. Pres., W. S. Crockett, 72 Main Street, Tollcross, Glasgow.
(4) *Royal Cornwall Polytechnic Society.*—En., Aug. 1. Pic., Aug. 9. Ex., Aug. 16. Sec., Edward Kitto, The Observatory, Falmouth.
(5) *Sheffield P.S.*—Ex., Nov. 21 to 26. O.C. G., S. and B. Sec., J. W. Wright, 62 Vale Road, Sheffield.
(6) *Newbury C.C.*—Ex., Sept. 20 to 29. Sec., E. J. Forster, Guildhall Club, Newbury.
(7) *South Essex C.C.*—En., Jan. 13, 1905. Pic., Jan. 18, 1905. Ex., Jan. 20 and 21, 1905. 2 O.C. S. and B. Sec., T. Mitchell, 180 Browning Road, Manor Park, E.
(8) *Motherwell Young Men's Institute C.C.*—Ex., Nov. 3, 4 and 5. 5 O.C. S. and B. plaques. Sec., Jas. Dunlop, Myrtlebank, Motherwell.

Trade

Catalogues, Price-Lists, and Descriptive Pamphlets.—*Thomas Illingworth & Co.*, Willesden Junction, N.W.—Picture frame mouldings for exhibition and professional work. Messrs. Illingworth's selection is large and their taste in the mouldings destined for exhibition walls quite the most cultivated we know. We advise intending exhibitors to get their illustrated list. Sent free.

Adams & Co., 26 Charing Cross Road, W.C.—Adams' cameras—Kenni, Videx, Natti, etc.

J. Lizars, 101 and 107 Buchanan Street, Glasgow.—A large list with about a dozen pages of practical notes. Sent free.

O. Sichel & Co., 52 Bunhill Row, E.C.— A very handsome list of the "Century" cameras. The illustrations illustrate rather neatly the use of the swing back, rising front, and other camera movements. Sent free.

Children's Portraits in the manner of the old masters to the number of about a dozen were recently shown by Messrs. Speaight at one of the Friday evening meetings of the Royal Institution. The collection, which was on view some days later in Messrs. Speaight's Regent Street Gallery, is another evidence of Mr. Richard Speaight's versatility in devising something fresh for his clients, and of his technical skill in carrying out his ideas. In costume, pose, background and general effect, the portraits are admirable photographic versions of well known pictures by Greuze Gainsborough, Morland, Sir Joshua Reynolds and other painters.

Self-toning Aristo is a new collodion paper with which we have obtained most excellent results. It requires very simple treatment—fixing only and a salt bath afterwards to give a rich brown tone. Or for a colder tone a slightly stronger salt bath is used before fixing. The paper is obtainable both matt and glossy; the beautiful surface of the former especially, and its transparent shadows, convince us that the paper will be generally popular. Self-toning Aristo is manufactured by the American Aristotype Co., for whom Kodak, Ltd., are distributing agents.

Digitized by Google

RIVAL BIGGEST PHOTOGRAMS. 39 ft. × 5 ft. From six negatives, enlarged on to one single piece of Rotograph bromide paper.

The Kodak Competition positively closes in a few days after the appearance of these lines, viz., on June 30th. We are asked to point out that under condition 7 of the N.C. Film Competition, it is stipulated that not less than three prints are to be entered. This, of course, means three prints from separate negatives, not three prints from one negative.

500 Cyko Cameras are offered by Messrs. John J. Griffin & Sons, of Sardinia Street, London, W.C., at prices approximating to one half those usually charged. The offer applies to the Guinea Magazine Cyko and the Folding Pocket Cyko No. 1. A post card to Messrs. Griffin will bring particulars of the scheme under which this offer is made, of the Cykos themselves, and of a competition in which fifty cash prizes are to be awarded.

For One Penny Stamp a new book is sent by Ilford, Ltd., Ilford, London, E., for the instruction and information of photographers. It contains some very practical notes on exposure, lighting the dark room, development, compensating for errors in exposure, intensification, reduction, and the defects from which the plate may suffer. Quite a budget of sound advice which no one could study without profit.

Border Post Cards.—Messrs. John J. Griffin & Sons, Ltd., now issue a box of border negatives, with the necessary masks and discs, to enable the post-card printer to surround his work with a decorative design. The shilling packet contains six negatives and twelve masks, and the effects obtainable certainly add to the attraction of the photographic post card. Moreover, workers in the sizes smaller than the statutory post card, $3\frac{1}{2} \times 5\frac{1}{4}$, can utilise their negatives to great advantage.

Royal Standard Plates.—The two new plates from the factory of Cadett & Neall, Ashtead, Surrey, to which attention was drawn last month, now turn out to be of beautiful quality. Both are rapid, and while we should choose the "Extra Rapid" for hand-camera work, the "Rapid" brand was found fast enough for exposures at about $\frac{1}{25}$th of a second with a focal-plane shutter. Both plates are extremely clean in working and fine in grain, and attain to as great a density as can be wanted in pyro-soda developer. These are qualities all of which the dry plate of perfect manufacture should possess in a high degree, and certainly the new Cadett plates evince the signs of years of experience in the making of emulsions.

The prices are popular: 1s. per dozen quarter-plates for both "Rapid" and "Extra Rapid" brands.

A Printing Board for Velox is now supplied by Messrs. John J. Griffin & Sons, Sardinia Street, London, W.C., in which provision is very conveniently made for placing the printing frame "square" to the light and accurately adjusting it at various distances. Further than this, the printing frame can be moved up and down and inclined at an angle, so that a negative can be dodged during printing, and the right position having been found in which the light penetrates some part of the negative of extra density, any number of prints can then be taken off automatically. The printing board is handsomely made in nickelled metal, and costs, with Bray gas burner, 8s. 6d.; or with electric light or incandescent gas burner, 9s. 6d. The apparatus folds up compactly, and is an accessory which anyone doing much printing by artificial light will not willingly be without.

Bi-photo. — Messrs. Boot & Son, 32-36 Fleet Lane, E.C., are issuing under this title the two-color anaglyphs of Ducos du Hauron. Pictures from stereoscopic negatives are printed in red and greenish blue in as close register as they will admit of. When viewed through a green glass by one eye and through a red by the other a certain stereoscopic effect is obtained. Dealers anxious to stock the novelty should communicate with Messrs. Boot.

Fitting up a Dark Room.—How to block up a window; how to make a developing table, a dark-room lamp, a water sprayer, and a dish rack; how to dry negatives and prints away from dust; how to make washers for plates and prints—is explained, with aid of working sketches, in *Photographic Apparatus — Making and Repairing.* Dawbarn & Ward, Ltd.; 1s. nett, 1s. 2d. post free; or from any photographic dealer or bookseller.

The Sanger-Shepherd Color Process continues to enjoy the commendations of scientific and literary people. One recent and notable instance was the lecture on "Early Painting in Miniature," by Mr. R. R. Holmes at the Society of Arts. *The Times* report refers to the three-color lantern reproductions of original miniatures in the Royal Library as "the feature of the evening."

Mr Sanger Shepherd recently had the honor of demonstrating his tri-color process before the King and Queen at Windsor Castle. Their Majesties expressed their interest in the process.

Mounts and Albums.—Messrs. F. A. Horle & Co. of Cardinal House, 8 St. John's Lane, London, E.C., notify us that owing to their being in want of warehouse room for their new patterns of amateur photo albums they are clearing their large stock of old patterns off at about 50 per cent. under factory prices. Our readers should take the opportunity and obtain particulars of this clearance line. It will be well worth the while of wholesale dealers to secure some of the lines, as the goods of the above firm have a reputation for quality, design, general get-up, etc., and at the present reduced prices produce a bargain which we are informed cannot be repeated.

The above firm also inform us that they are still holding large London stocks of parchment and buff envelopes for photographers, also of enamel and other boards for mounts, etc. Samples of these latter goods will be sent on receipt of trade card.

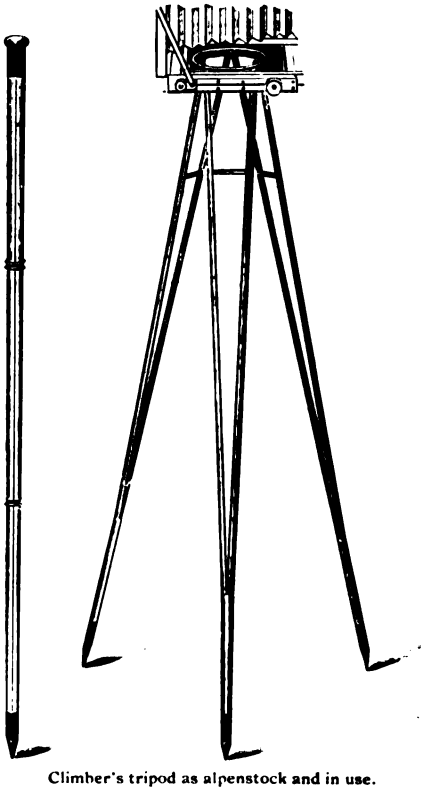
Digitized by Google

A Climber's Outfit is prepared specially for mountaineers, tourists, and others, by Messrs. W. Butcher & Sons, Camera House, St. Bride Street, E.C., and consists of a half-plate camera, of long extension and wide range of movements, and with no projections; a changing box for plates or films, casket of lenses, tripod, forming an alpenstock when closed, and the all-convenient rucksack referred to in the "Tourist" pages this month. The whole equipment is carefully arranged for the purpose of a photographic tramp in mountain districts. Indeed, the outfit is one which is admirable for the more usual walking tour. Messrs. Butcher issue an eight page description of it.

The Rücksack in use.

Mounts. — Messrs. Butcher of Camera House, St Bride Street, E.C., send us samples of paste-down and slip-in mounts in tasteful variety, and at prices which were unthought of a year or two ago.

The "Leicester" and "The Vandyke" are two paste-down patterns which we very much like, but those interested had better write for the list. Messrs. Butcher also now issue a set of art mounting papers suitable for the modern multiple practice which Mr. Evans is now teaching in these pages.



Climber's tripod as alpenstock and in use.

A Level to lie flush is now made by Messrs. Taylor Taylor & Hobson, Stoughton Street Works, Leicester. Like the existing pattern, the level can be obtained either bright or black, and costs only 1s. The new form is one which we personally appreciate. It is less conspicuous on the hand camera, and safe from damage.

Aristo.—Messrs. Kodak, Ltd., are now trade agents in London and the South of England for the printing paper which in professional circles in America has firmly established itself through the length and breadth of the land. "Aristo-Platino," as it is called, is a matt collodion paper of great perfection, and Messrs. Kodak, Ltd., in introducing it to the London photographers, were well advised in saving superlatives and allowing the paper to show its quality. This they did by arranging at 43 Clerkenwell Road an exhibition of work by leading professional users of Aristo in the United States. The collection, which included portraiture by Knaffl Bros., Falk, and other leading workers, showed better than pages of talk how Aristo-Platino gives a pure black with the peculiar richness and gradation which is held by some to be the sole prerogative of carbon. The Kodak Co. will send a booklet, "On the Selection of a Printing Process for Professionals," free on application.

A new Goerz Lens.—The firm of C. P. Goerz, 4 and 5 Holborn Circus, London, W.C., have just issued the "Syntor," a symmetrical lens very little in excess of an ordinary R.R. in price, but with optical qualities greatly superior to a lens of that description, as the following tests will show. In construction, the lens is similar to the 1B and 1C series of the same maker, that is to say, there is an air-space between each element of the combination. The lens sent us for trial has a focal length of 8·1 in.

The field is flat, and free from astigmatism over an angle of nearly 60°. Spherical aberration is well corrected. The single combinations have a focal length of 14·4 in. and 14·6 in. At an aperture of 16 on the iris diaphragm (equally, approximately, to *f*/32) the single combination gives good definition all over the same plate that the complete lens covers at full aperture, viz., 7×5 in. Stopped down to *f*/16 the complete lens covers a whole plate perfectly.

The price of this size is £6 5s. mounted in brass with iris diaphragm marked to the standard F numbers of the R.P.S.

While the corrections as a whole are not quite equal to the Series III., they are quite good enough for anything but the most critical work. For portraiture the single lenses, at full aperture, give a pleasing softness of definition without that extreme fuzziness so disliked by some photographers.

New Businesses, Changes of Address, etc.—*New Dealers.*—J. E. Jeffrey, 433 King's Road, Chelsea, S.W.

Parkes, Ltd., 189 Finchley Road, South Hampstead, N.W.

Mr. Dixon, 21 Hill Street, Richmond.

G. A. Cawkwell & Co., 1 Salisbury Terrace, Northfield Lane, West Ealing, W.

PRINCIPAL CONTENTS.

Photography on Tour.
Mounting the Exhibition Print. By Fredk. H. Evans.
The "Natural History" Competition.
What's What.
Forthcoming Exhibitions and Competitions.
Trade.

The Process Photogram

contains the whole of *The Photogram plus* the following articles and notes relating to photo-mechanical processes:—

Tri-color Filters and Direct Tri-color Work.
The Gürtner Two-color Process.
The First Exhibition of Three-color in Paris.
Practice and Theory of Half-tone Etching. By E. Klimsch.
Current Topics.

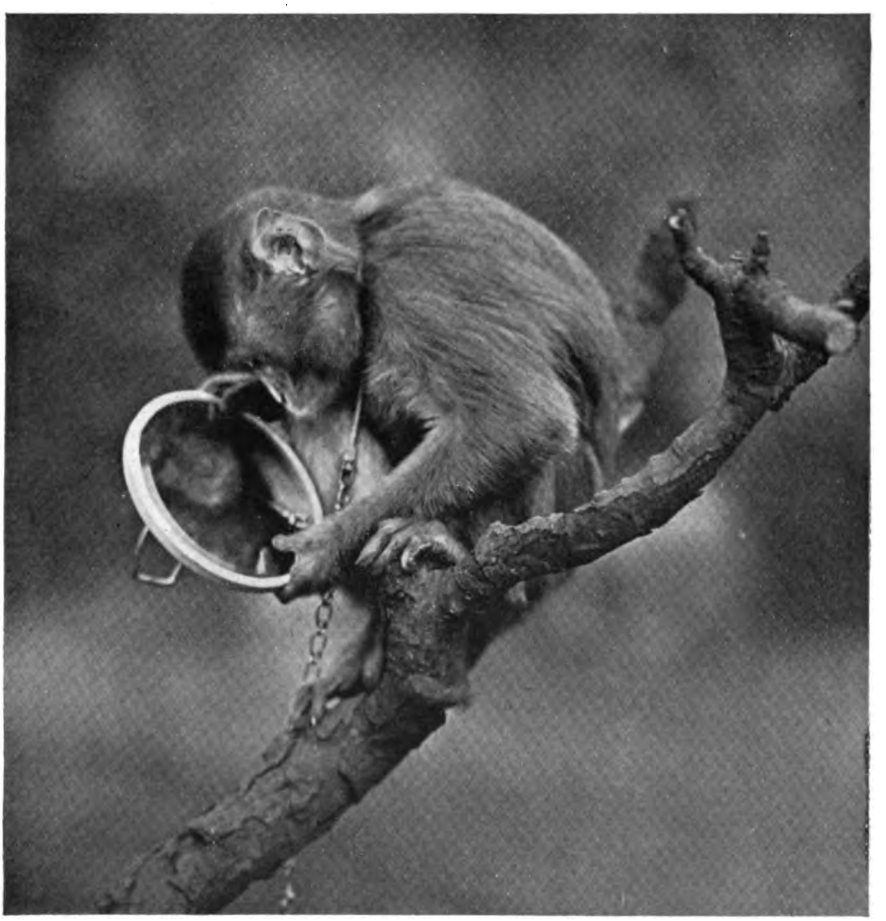
Digitized by Google

THE PHOTOGRAM

VOL. XI. AUGUST, 1904. No. 128.

Editors:
H. SNOWDEN WARD.
CATHARINE WEED WARD.
GEORGE E. BROWN, F.I.C.

COPYRIGHT.—*This Magazine as a whole, with its contents, both literary and pictorial, is copyright; and the copyright is registered in Great Britain and the countries forming the Copyright Convention. Our contemporaries are very welcome to quote from our pages (with acknowledgment), but we propose to protect ourselves and our advertisers against piracy.*



"VANITY."

By W. WEAVER BAKER.

Second Prize in Natural History Competition (page 203).

Digitized by Google

NATURAL HISTORY PHOTOGRAPHY.

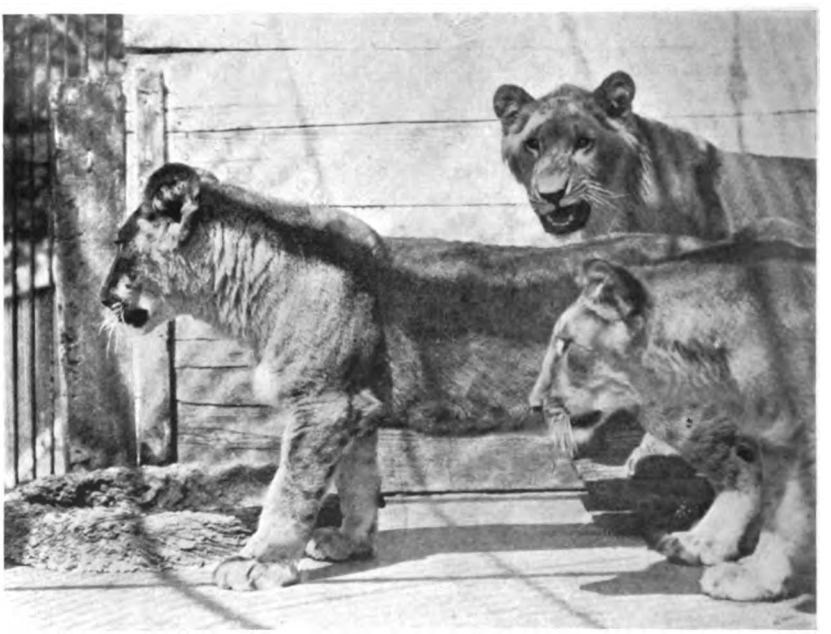
EDITORIAL NOTE.

In publishing this month the results of the competition which should properly have appeared in the July number, it will be seen that the two prizes go to subjects into which the photographers have contrived to infuse a certain proportion of humor—if not of pathos. The wording of the competition quite admitted of this, and we are not displeased to find this point of similarity in the two prize pictures. Unfortunately, the print of "Sympathy" does not reproduce as well as the others.

While the subject is before us, we may refer to the advantages of linking the study of photography with that of natural history, not in practice merely but in organisation. There are societies, originally founded for natural history study, which have started a photographic branch, though we never heard of a photographic society having added a science section to itself. The alliance, however, is usually a source of strength to both parties. It is a wholesome sign of the times to find societies with these dual objects on the increase. Photographers, at any rate, have nothing to lose and much to gain from such a state of things.

THE first prize print—"Sympathy," by Harry E. Staddon—recalls the clever work of Mr. Douglas English, whose book "Wee Timorous Beasties," recounts in interesting fashion the delights of such photography. Owing to certain contracts with a publisher, Mr Stoddart is not at liberty to speak of his methods.

"Vanity," by W. Weaver Baker, to which the second prize goes, is a reward of photographic persistence. "The negative," writes Mr. Baker, "was obtained after many failures, owing to the continual movement of the subject. The chief difficulty was the apparent unwillingness of the animal to pose in such a manner as to enable me to secure the reflection of her



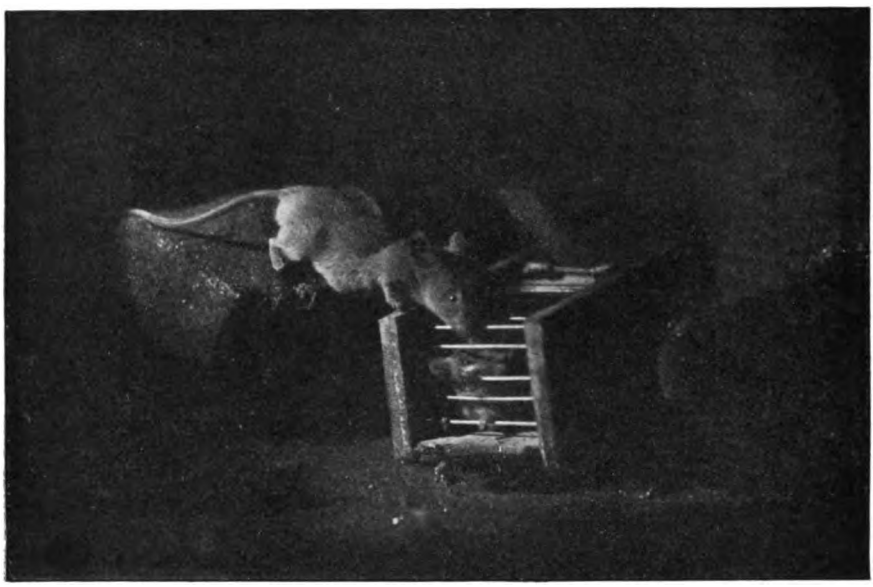
YOUNG LIONS AT THE NICE ZOO. *By W. Candery.*

Negative on Lumière plate with Goerz IIIA anastigmat. The reproduction is from an enlargement (about 5 diameters), and scarcely does justice to the remarkable sharpness of the original.

Digitized by Google

face in the mirror. The light was good, diffused, shortly after noon in May. The lens used was a French 'cabinet' portrait working at *f*/5. Exposure, $\frac{1}{20}$ sec., outdoors, on 'Warwick' *ordinary* plate. Developer, very dilute pyro-soda. My experience of obtaining a series of five studies of this monkey has proved to me the advantage of choosing a day on which the light is good, but not actual sunshine: of having a tree stump for the animal to pose upon, *and* of possessing an unlimited supply of *patience*."

Successful animal photography (writes Henry Waller) is one of the most difficult tasks which falls to the lot of the amateur. Both in the



"SYMPATHY." *By Harry E. Staddon.*
First Prize in Natural History Competition.

open field or in the Zoo the photographer will have to exercise considerable skill, combined with endless patience and tact in order to secure a passable result. The two latter qualifications are indispensable, and these must be coupled with readiness of action at the critical moment. In the Zoo the difficulties are greater than in the field, and repeated visits may be necessary before the desired result is obtained. It is desirable to take some delicacy that the animal has a preference for, and if the keeper can be induced to lend a helping hand, so much the better.

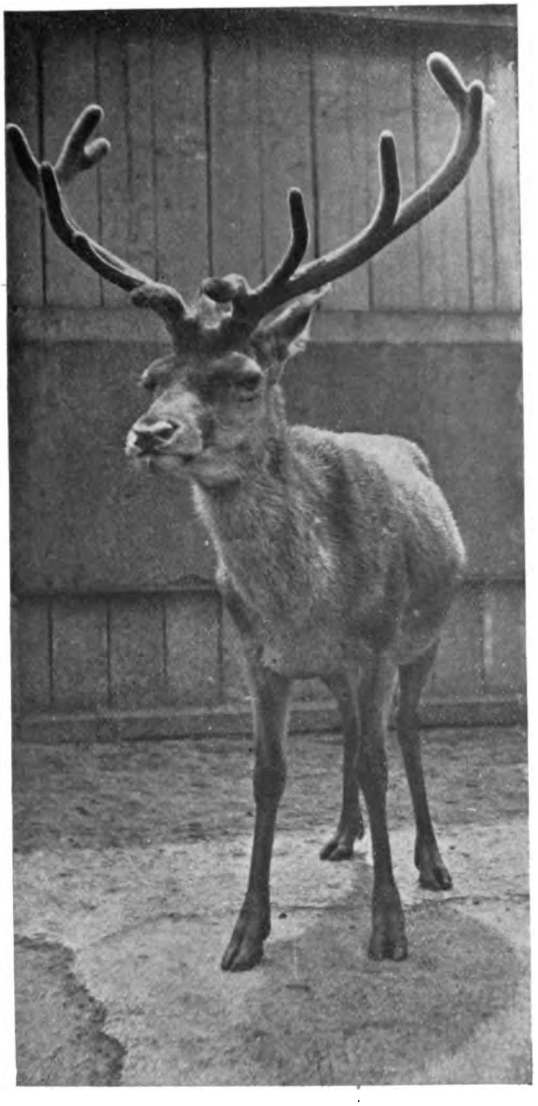
It should be regarded as an inviolable rule that the bars of the cage must not be included in the photogram, and it must, at the same time, be appreciated that it is not every animal that will allow the intrusion of a lens into his domain. A sharp look-out must therefore be kept, and at the slightest sign of disapproval a retreat will be advisable. In dealing with animals in captivity it is not, as a rule, necessary to work the shutter at a higher speed than $\frac{1}{15}$ of a second, and as the conditions of lighting are not always of the best, the lens should be used at open aperture.

In the case of the example on the next page, the animal was very restless, seldom remaining in one spot for more than a second at a time. He was caged, and in making the exposure the lens of the hand camera was thrust between the bars. After waiting a considerable time, the animal faced the camera for a moment, when the shutter was released with the result shown.

Digitized by Google

The exposure was $\frac{1}{15}$ of a second at *f*/8 with a R.R. lens, on an Imperial "Special Rapid" plate, backed; and, as will be observed from the shadow, the source of light was behind the animal.

"English Butterflies," by Jas. H. Saunders, are from a negative on a Barnet ortho plate exposed without a screen for ten minutes at *f*/22 in a diffused light. Red, brown, yellow and black predominated in the colors, hence the great length of exposure. For the same reason no screen was used. The negative was developed in pyro-soda much diluted, printed on Aristo, and toning done with platinum. In mounting the flies, they are fastened by pins inserted from the other side of the background sufficiently to just enter the body. Great care must be taken in handling the flies, as they are very brittle after being set, and the least unnecessary touch might break off a wing.



A STAG IN CAPTIVITY. *By Henry Walker.*
Natural History Competition.

The bird study by C. H. Hooper, on page 212, was taken in an ordinary sitting-room three feet from a window facing west. The exposure, with an Aldis half-plate lens at *f*/7, was 1 sec. on "Barnet medium" plate; negative, pyro-developed. The reproduction is from a "Carbona" print, gold toned.

The two specimens of insects photographed almost life size (page 212), are from a large number sent in by Mr. Jas. Edwards, who explains his methods as follows:—"Probably the greatest difficulty one has to contend with is the tendency of the 'model' to take up a position anywhere except 'on the plate'; and in this connection, the contrivance from which I have received most assistance is an instrument known to microscopists as Beck's disc-holder, by means of which one can impart to a disc of white cardboard a rotary movement in both horizontal and vertical planes. In practice it operates thus:—The insect to be photographed is placed on a moderate-sized disc of white card, which is fixed to the disc-holder in place of the proper metal disc. I wish to have my model with his head to the strongest light; when

Digitized by Google

CAT AND KITTENS. *By Miss E. Collier.*
Natural History Competition.

the period of least movement arrives his position is otherwise satisfactory, but he is lighted from behind (he faces the wrong way); a slight turn of a milled head, with, possibly, a trifling subsidiary movement by means of the pivoted arm, and his position with regard to the light is completely reversed (I turn him round), and that, thanks to the excellent mechanism, without any disturbance whatever.

"The necessary depth of focus cannot be obtained with lenses of extremely wide aperture; *f*/11 is the largest stop which is generally practicable. Whatever there is to be of enlargement must be obtained direct from the object, consequently the lenses must be selected with reference to the magnification required and the length of camera available; as there can be no direct focussing on the screen, the relative positions of object, lens, and plate are ascertained by calculation. I have found both Ross-Zeiss and

ENGLISH BUTTERFLIES. *By Jas. H. Saunders.*

Io (Peacock).

Atalanta (Red Admiral). Polychloros (Large Tortoiseshell).

Natural History Competition.

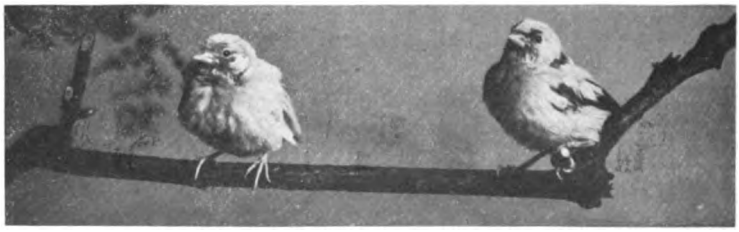
Digitized by Google

MEADOW BROWN BUTTERFLY WITH GRASS.
Original, natural size; here reduced to two thirds. *By Jas. Edwards.*

running. The proportion of failures is somewhat larger than one could wish, but there is much of fascination in the study of the temperament of these little creatures. Even when one has secured a good negative it not unfrequently happens that the picture of a living insect looks like that of a dead one; but, on the other hand, a photogram of a dead insect, however skilfully it may have been arranged, never looks like that of a live one."

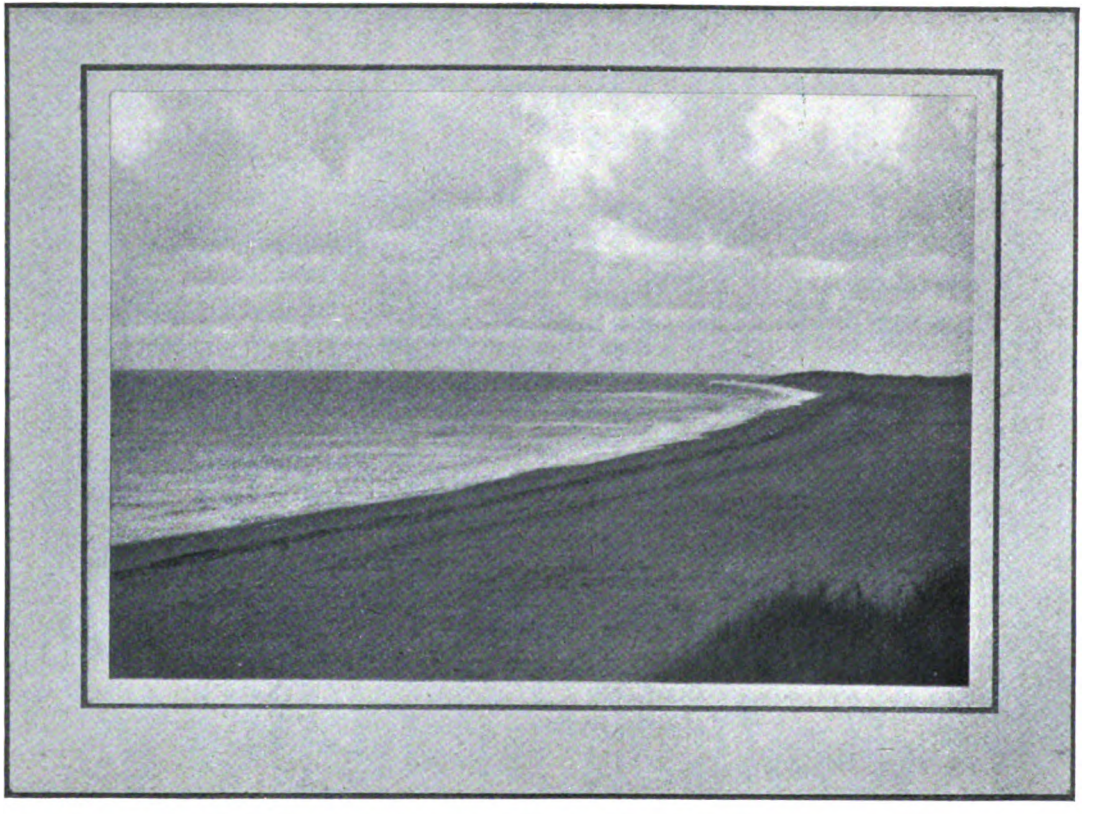
Goerz lenses work satisfactorily. Exposure is necessarily brief; my shutter works approximately at $\frac{1}{80}$ to $\frac{1}{100}$ sec. Up to the present I have found Edwards' isochromatic snapshot plates give the best results, but I anticipate that some of the more rapid makes of orthochromatic plate recently introduced will render practicable photograms of many subjects which have hitherto been impossible. I like best a dilute pyro-soda developer. For lighting I find nothing equal to the strongest daylight available. The management of the 'subject,' though not really difficult, is a matter calling for the exercise of considerable patience and perseverance; butterflies naturally make for the most brilliantly lighted spot: many insects can be made to stop for a moment by blowing upon them lightly and suddenly; and most kinds of spider will 'strike an attitude' if one tap be given to the support on which they are

GROUND SPIDER (*Ocyale mirabile*).
Female carrying her globular silken bag of eggs. Original, three times natural size; as here reproduced twice natural size.
By Jas. Edwards.



BIRDS. *By C. H. Hooper.*
Natural History Competition.

Digitized by Google



LONELINESS. BY FREDK. H. EVANS.

MOUNTING THE EXHIBITION PRINT.

The picture portion of this supplement to be cut out and mounted as directed by Mr. Evans in the article on page 215. The outer mount of Stone, not shown in the reproduction, measures $10\frac{1}{2} \times 8\frac{1}{2}$ inches.

Digitized by Google

Digitized by Google

MOUNTING THE EXHIBITION PRINT

BY FREDK H. EVANS.

This series of progressive lessons in the modern border-mounting of prints, which commenced in the January number of The Photogram, *is continued each month throughout the year. The instruction is given in reference to an actual example to be mounted by the reader on the paper, or papers, of the covers.*

This month's exercise.—Print:—"Loneliness." Mounting Papers:—Lindenmeyr's "Stone" (this month's covers), and "Nut Brown" (April covers).

For this month I am submitting a little sea beach study I made many years ago, which I then called "Loneliness." The clouds are from the same negative and obtained at the one printing. The feeling of expanse suggested by this curving line of lonely beach called for a mounting that should also suggest wide spaces and simplicity in aim and end. A coldish color also seemed desirable, and so the useful Stone paper was again requisitioned; but this time, as delicacy was not specially indicated, white lines would have been out of key, not harmonising with anything in the print. Brown lines were therefore decided on, and those to be wider apart than before; if they had been as close together as in the July example, a confining sense would have been given, the reverse of what seems needed by the subject of the print.

The picture, when cut out as usual, is first mounted on the Stone paper, and that cut away to show a margin of $\frac{1}{8}$th inch all round; this is then placed on a piece of the Nut Brown paper as used in the April number, and that trimmed to show only a narrow line, not too narrow, and yet in no sense a too obvious line by undue width. This has in turn to be placed on a second piece of the Stone paper, and that trimmed to a margin of $\frac{5}{16}$ths inch at top, $\frac{3}{8}$ths at sides, and fully $\frac{7}{16}$ths at foot. This has now to receive its brown line, in the same way, of course, as we obtained the first. The whole then goes on to the final piece of Stone paper forming the bottom and chief mount, showing margins relatively true to those given in the reproduction of the mounted picture.

The effect of the whole is simply two brown lines ruled on a cold grey, and of sufficient width to suggest space, etc. If the print had been a larger one than from a 5 x 4 negative, I should have increased the width between the brown lines, but sufficient is here given to gain the effect desired and to carry out and enforce the meaning and idea of the picture.

"Photography on Tour," the pocket, though enlarged, edition of last month's special article, has been selling rapidly, and we have been gratified at receiving favorable opinions of it. Though not exactly light reading, it is nevertheless a bit of holiday literature of technical, if not recreative, value. *Photography on Tour* is a "how-to-do-things" book, and on that character bases its right to be in the tourist's pocket when he starts, to be studied in the train, and to be consulted again and again. The dealer supplies it for 1s. nett, or Messrs. Dawbarn & Ward, 6 Farringdon Avenue, London, E.C., can be prevailed upon to send it for 1s. 4d.

Digitized by Google

ADVANCED HAND-CAMERA WORK.

by Walter Kilbey.

This month's instalment of Mr. Kilbey's articles deals with the photography of athletics and the development of plates exposed for only the minute fraction of a second. In succeeding numbers of The Photogram *other difficult classes of hand camera will be considered.*

Now I daresay a number of my readers, being duly armed with their permit, will stride into the athletic field, thinking two things: (1) that they can roam about or photograph from any spot they choose, and (2) that *now* they are sure of some excellent results. Therefore it will be my endeavor to try and save disappointment. First, your permit must not be abused, or you will easily bring yourself and photography into discredit. If in doubt as to whether you are in the way, do not risk anything before you ask one of the officials. Secondly, never be beguiled into thinking that good results are *certain*; this is very erroneous, and I will attempt, as briefly as possible, to indicate the best methods of avoiding failure. There is, of course, no reason why you should attend the meeting with forebodings of ill-luck and bad pictures; they do not want timid, miserable people at sports festivals, so keep cheerful, and having determined to succeed, keep careful watch on those events which seem likely to promise the best results. I strongly advise the photographer to get his camera ready as he nears the ground, so that should occasion arise, he can use it immediately; in fact, I do not think one is entitled to be called a hand-camera man unless he always has his plate ready. Unless one is absolutely certain of one's apparatus, nothing very striking is likely to be secured. You must keep cool, and this is an impossibility, if you are, all the time, wondering whether there is a chance of light entering the camera and fogging your plates. Having arrived at the scene of action, obtain a programme. Peruse its contents. Take a stroll round the ground, noting where the various races start and finish. An inspection of the programme will show you that the events can roughly be divided into two classes: (*a*) those taking place on the flat, such as running and cycling, and (*b*) those in which some obstacles are interposed in the path of the competitors, such as hurdles, water-jumps, etc., etc. Of the former, the shorter distances, from a hundred yards to a quarter of a mile, are the only ones where close finishes are likely to result. Of the latter the hurdle-races merit attention. The obstacle race is generally too tame from the photographer's point of view, except perhaps the water-jump.

To photograph the "finish" of a race, a position at a distance of eight or ten yards from the winning post should be taken up. In selecting the position, if you have any choice, remember that a frontal or "end-on" view often lacks "life," and that to obtain a sharp picture of the competitors racing in a direction which is at right angles to the lens, requires such an exceedingly fast shutter that the risk of gross under-exposure is considerably increased. Much more pleasing generally are the results taken at angle of about 45°. If it is possible, place yourself in such a position that the sun is somewhat behind you.

A word as to the background. Sprinters it should be your endeavor to secure, with a fairly distant clump of tree behind them. Hurdlers are better if clearly silhouetted against the sky. Having selected the most promising

Digitized by Google

position, set your focussing arrangement for the correct distance, which can be paced off if there is any doubt. Everything being absolutely ready, you had better make yourself as inconspicuous as possible by kneeling or bending down so that you will not interfere with the view of any spectators who may be behind you. At the sound of the pistol for a short race, every attention should be paid to the finder, and at the psychological moment the shutter

1-1000th second on a Warwick plate. Reproduced by permission of the Warwick Dry Plate Co.

release is coolly and unhesitatingly pressed, and the "finish" secured. It is easy to advise you to be cool and unhesitating, but the dash of the competitors and the cheering shouts of encouragement from the crowd will be rather disconcerting to you on the occasion of your first attempts. Coolness and nerve *must* be acquired, and frequent visits to such scenes will result in an imperturbability of mind which will be proof against such demonstrations, and you will secure what you require with the utmost *sang froid*.

A few "Starts" will relieve the monotony, and will help to complete the series. The finals are generally run off late in the day, but when the light is good, one can work up as late as 7 p.m., and still secure good results, as will be apparent from the illustration entitled "Timber Topping" on page 219, which was secured at about this hour, the exposure being about $\frac{1}{1000}$ sec.

At this stage, I daresay, several of my readers will be putting the hints and advice contained in this and the preceding articles into practice, and naturally, of course, the question of development of these very rapidly exposed plates forces itself upon one; therefore, before going further, I purpose to offer right here, as I feel sure such advice will be more opportune than at the end of the series, and I am confident that such will assist the reader in saving several plates that would otherwise be "wasters."

It hardly seems necessary to enter on this subject at any great length, for the reader who has had any experience at all will have decided in his own mind what plates he prefers, or at least which particular brand gives, in his hands, the finest results. So far as ordinary work is concerned, there is no need for plates of extraordinary speed, though of course, in bad weather,

Digitized by Google

when there is no sun, and but little reflected light, the use of ultra-rapid plates is almost imperative. In the summer time, when the light is at its best, a good ordinary plate will be sufficiently fast for general work, such as street scenes, landscape and figure studies, where the lens is not stopped down to, say, more than about *f* 8 to *f* 11, and the shutter driven at a speed not exceeding, say, $\frac{1}{25}$ sec. As the day wanes, a plate of medium rapidity might be used instead of the ordinary, and at or near sunset a rapid plate would be useful. With regard to the latter, however, it should be borne in mind that the light at sunset is of an extremely yellow color, and far better results would be obtained if an isochromatic plate were used. For those who prefer rollable films there is not so much choice, as so far as my experience goes, they are all, with possibly one or two exceptions, very much about the same rapidity. The exceptions, however, are comparatively rapid, but as advertisements in *The Photogram* are confined to their proper pages, wild horses shall not drag from me the names of the makers.

When one comes to focal-plane work, however, the case is rather different, for here we are dealing with exposures many times less than those which would ordinarily be given. For subjects demanding exposures ranging from $\frac{1}{500}$ sec. to $\frac{1}{1000}$ sec., the fastest plates that can be procured will be required, unless we are working by the seashore, and in the brightest sunlight, when a slightly slower plate would be admissible. Much depends, however, upon the aperture of the lens, for if one of the newer anastigmats be used, for general work, quite a slow plate might be chosen for all-round use, unless we wish to stop down to obtain additional depth of focus, which would again necessitate the use of a more rapid plate. The reader who uses a hand camera fitted with dark slides will of course be able to carry with him a selection of plates of varying speeds, but for focal-plane work this plan is not to be recommended.

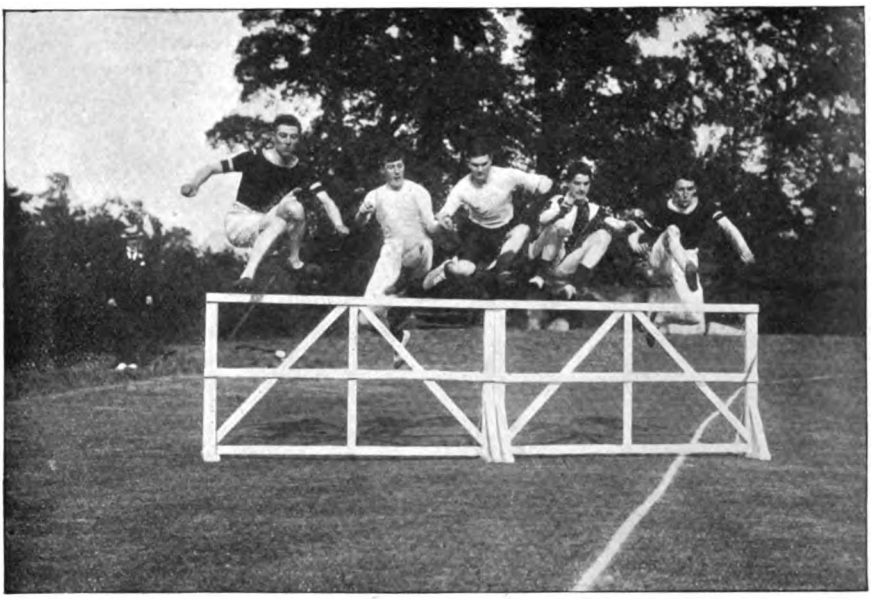
And now a few words upon development. For ordinary work none of the newer developers have supplanted "good old pyro" in our affections: there is no doubt that its pliability renders it useful in almost every case. Exposures with the focal-plane shutter occasionally have to be much cut down on account of the rapidity of movement of the subject, and in such cases the addition of a little metol enables us to get out of the plate all that is in it. There must be, however, a minimum of exposure, and if we have gone lower than this, the developer which will produce a satisfactory negative remains to be discovered.

My usual formula in these cases is as follows, and although I have tried many others, I have always returned to my old love:—A. Pyro, 40 gr.; metol, 35 gr.; potass metabisulphite, 90 gr.; water (boiled or distilled) to 20 oz. B. Soda carbonate, 3 oz.; water (boiled or distilled) to 20 oz.

This is a really good all-round developer for negative work, and if the plate used is likely to fog, the addition of a few minims of a 10 per cent. solution of potass bromide (say 10 minims per ounce of mixed developer) will prevent this.

We will suppose we are dealing with a subject in which the exposure is known to be approximately correct. In such a case we should take equal parts of A and B, and dilute with an equal quantity of water (equal, that is, to the combined bulk of the two solutions). If over-exposure is feared, then take, say, two parts of A to one part of B, and add a few drops of 10 per cent. bromide solution before applying. If this is insufficient to prevent general fog, or if the over-exposure is found to be very bad, a few drops of citrate of potash solution may be tried. If we know that our plate is under-exposed, we have the choice of two methods: one is to develop with a very concentrated solution, and for a short time; the other is to use a dilute solution for a lengthened period. My own practice lies somewhere about

Digitized by Google

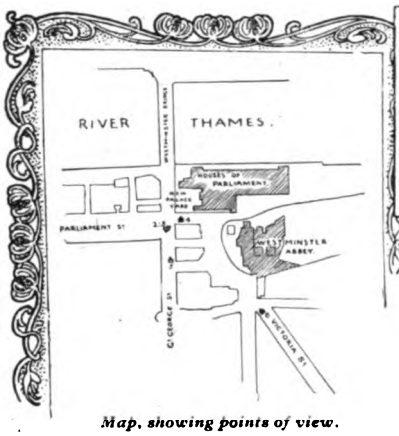


"TIMBER TOPPING." BY WALTER KILBEY.

1-1000th second, at *f*/6, Goerz-Anschutz focal-plane shutter.

half-way between these two. If about to develop a quarter-plate which I know has received a minimum exposure, I should take 2 drams of the A solution, 4 drams of the B, and make the total bulk up to 2 oz. with a saturated solution of soda sulphite, the latter being warmed in cold weather. This would be applied to the plate, and the latter covered over, and occasionally rocked. At the expiration of, say, five minutes, if nothing has appeared, another dram of the B solution might be added, and the effect noted. The image should now begin to appear, and if it does so, the plate may be left for a further fifteen to twenty minutes, but at the expiration of that time, if development is not complete, the developer should be poured away and replaced by fresh solution, otherwise the plate will be so very much stained that it may take days to print. With those rapid plates, with which it is difficult to obtain density, the developer might be strengthened, after all the possible detail has appeared, or an entirely new one composed of equal parts of A and B poured on and allowed to act for a few minutes. It will require to be carefully watched, however, lest the detail in the high-lights becomes clogged up. I should not omit to add that the above developer has proved suitable for use with every make and rapidity of plate which I have used, with one exception. The exception is a plate claimed by the makers as the most rapid in existence. It fogged most hopelessly under the above treatment, but with the ordinary pyro-soda developer recommended by the makers, proved most satisfactory. Was this a peculiarity of the plate, or was it grossly over-exposed? If the latter is the correct solution, I can only say that, considering the subjects upon which it was exposed, and the exposures, mostly $\frac{1}{1000}$ sec. at *f*/4·5 to *f*/6, then the makers' claim as to its rapidity is most amply borne out.

Digitized by Google



Map, showing points of view.

SIX-PLATE PROMENADES

A series of brief walks with a camera in London—continued from March issue.

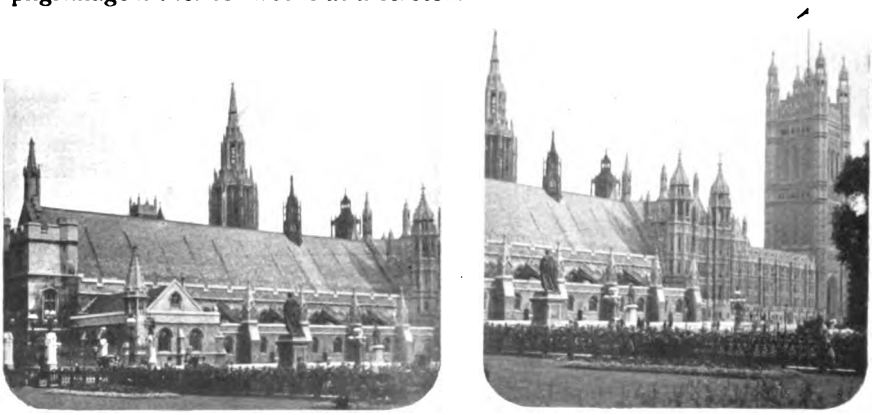
IV.—WESTMINSTER.

By H. SPRINGALL.

Exposure No. 1.—From Waterloo Bridge.

STARTING from Waterloo about 2.30 and crossing the bridge, not shown in map, the characteristic river side view on the right invites our first exposure. Owing to the position of the wharves the sun rarely illuminates them from riverwards, but the lack of sunshine adds to, rather than detracts from, the truth of the photogram, for it represents the scene naturally. The exposure given was $\frac{1}{25}$th sec. at $f/16$.

As Parliament Square is to afford us most of our exposures, we walk along the Embankment to the scene of our pleasure. Without waste or duplication a dozen plates might be exposed in this neighborhood. In fact few spots in London are richer in outdoor and indoor subjects for the camera, and not a few photographers have made a daily pilgrimage hither for weeks at a stretch.



Exposures Nos. 2 and 3.—The Houses of Parliament from Parliament Square.

Digitized by Google

The next two exposures of this series were made from the same standpoint, the camera being moved slightly round for the second after the first was made. It will be seen that the pictures (2 and 3) overlap, one part of the Houses of Parliament being included in both prints. The beauty of the Victoria Tower warrants a more central position for it, which might have been secured by photographing from a little nearer to Westminster Bridge. The exposures in these two instances were $\frac{1}{25}$th sec. at $f/16$, and half the standard quantity of restrainer.

Exposure No. 4.—The entrance to the House.

The fourth exposure shows the entrance to New Palace Yard, taken just as a hansom is returning from carrying a fare to the House.

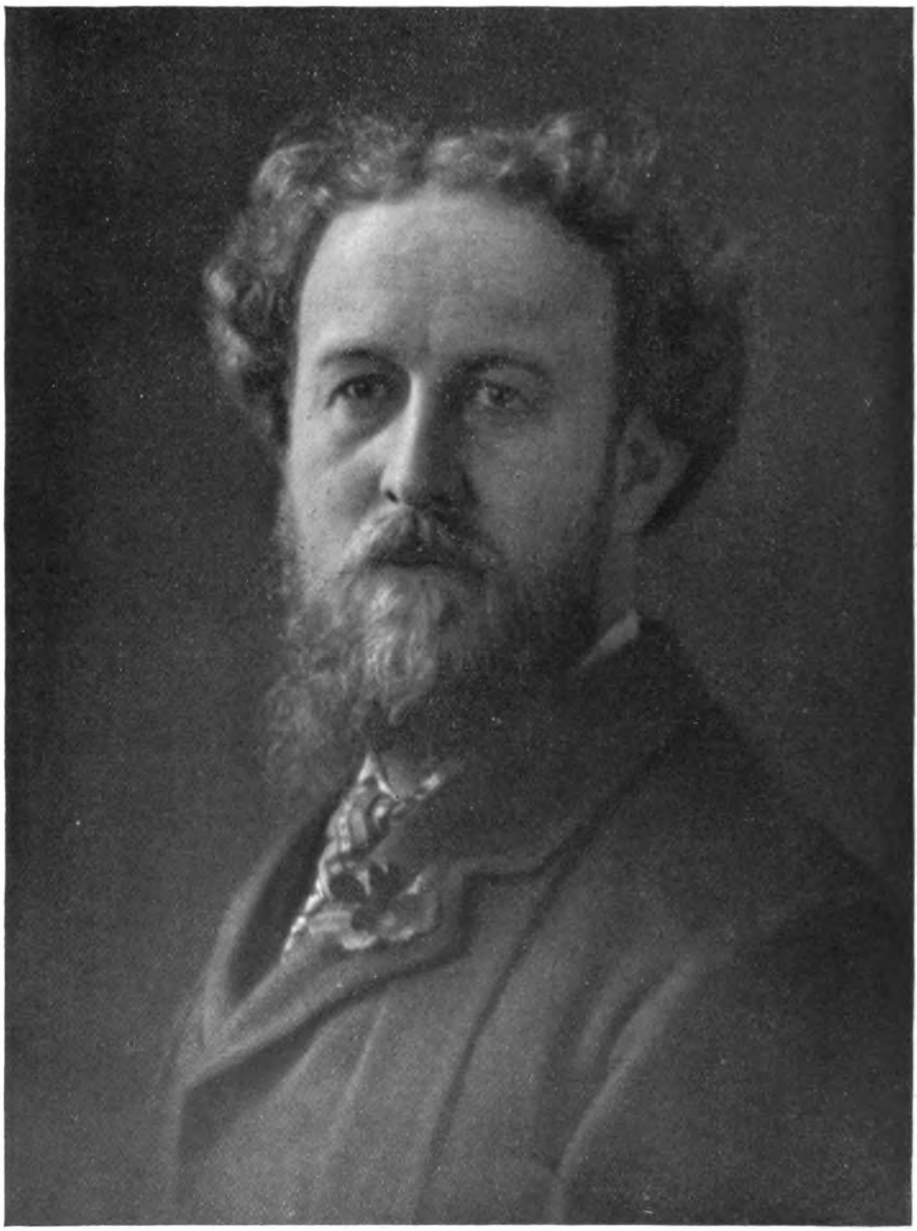
"Big Ben," No. 5, is an old friend of every Londoner, and, of course, claims an exposure to himself. The position occupied was the north-west of the Square, near George Street. The extreme rise of the Sanderson front proved its value here, and a gentleman with a box camera, after trying in many ways to secure satisfaction, looked approvingly at the ingenious movement which allowed the lens to be moved above the top edge of plate and still keep the camera horizontal, and walked on. $\frac{1}{50}$th sec. at $f/6$ was given, and no bromide used in the developer.

Exposure No. 5.—Big Ben.

The last photogram was taken in a bad light, so $f/8$ was used and $\frac{1}{25}$th sec. given. The point of view was the corner by the Westminster Palace Hotel and facing the Abbey West Door, which latter is shown with St Margaret's and Big Ben. The monument to the Westminster Schoolboys who fell in the Crimean War is just shown, although marred by the back of the cab.

Exposure No. 6.—The Abbey and St. Margaret's.

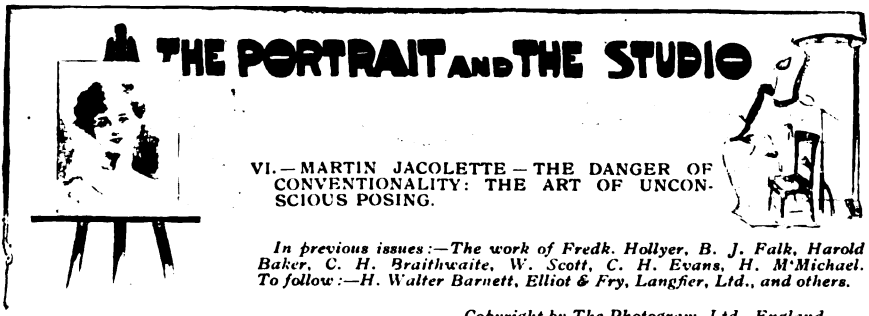
Digitized by Google



THE PORTRAIT AND THE STUDIO.

VI.—THE WORK OF MARTIN JACOLETTE.

Digitized by Google



VI.—MARTIN JACOLETTE—THE DANGER OF CONVENTIONALITY: THE ART OF UNCONSCIOUS POSING.

In previous issues:—The work of Fredk. Hollyer, B. J. Falk, Harold Baker, C. H. Braithwaite, W. Scott, C. H. Evans, H. M'Michael. To follow:—H. Walter Barnett, Elliot & Fry, Langfier, Ltd., and others.

Copyright by The Photogram, Ltd., England.
Copyrighted 1904 by Tennant & Ward, New York.

MARTIN JACOLETTE is one of the non-advertising photographers—a man who just goes ahead and makes a great success without making any fuss about it. In fact, if we have any complaint against Mr. Jacolette, it is that he does not enter more fully into the public doings of the profession, and enable many to benefit by the results of his wide observation. He is not a recluse, but he is a man who needs to be sought, rather than a man to push himself into prominence.

He is a very welcome member of the Photographic Convention, and holds office in that body, as well as in the Royal Photographic Society, and the Professional Photographers' Association. Of the last-named he is a very earnest supporter; latterly he has worked very hard and very hopefully on the committee *re* the granting of certificates to assistants. This committee is almost prepared to make an announcement of steps which should prove most beneficial to the whole profession.

Mr. Jacolette's business began in Dover, where he had his first experiences with Lambert Weston, one of the grand old men of the profession, and where he built up an unusually fine connection, which still remains, although he has also a great business in South Kensington. Technical perfection has been an especial aim, and Mr. Jacolette has given far more time and attention than is spared by most professionals, to experimenting with new processes and appliances which seemed promising. This was notably the case with platinotype, a process which he was the first professional photographer to render really popular amongst his customers, and to the success of which he largely contributed by the suggestion of "plate-sunk" mounts. Like Passingham in the north of England, Mr. Jacolette produced prints which were rich, vigorous, full of gradation, with velvety shadows and hearty, transparent high-lights; in other words, he took the trouble to do the best of which the new process was capable, and to make negatives specially suited for it, instead of being content with the flat, grey, lifeless prints which passed for "new permanent platinotypes" in too many show-cases of those early days.

In practical optics, too, Mr. Jacolette takes keen interest. He not only tries the various lenses produced by our photographic opticians, but also thinks out his own requirements, and orders a specially made or modified instrument if he thinks it likely to be useful. The Dallmeyer-Bergheim lens found in him one of its first professional supporters. He has two very large ones, modified to his own suggestions, and used one of them for the portrait reproduced herewith. He thoroughly appreciates its softly diffusive pictures, but has never introduced it into everyday use, because he does not wish to vulgarise the effect or to make it a fashion amongst his connection. He realises very fully that the worst sort of convention is when a method especially suited to a certain class of subject is applied indiscriminately to

Digitized by Google

all: and a wish to use the most suitable method for each individual sitter is a leading point in Mr. Jacolette's work.

The studio in Kensington is a very large room, probably the longest studio in London. It has a high glass side, and a high glass roof along almost the whole of the north side. Like most of the studios of successful men, it has no very special feature, and Mr. Jacolette frankly admits that it is far from his ideal. Though he built it himself, he was largely controlled by existing and adjoining structures, and if he were building now, since the advances that have been made in plates and lenses, he would build it lower, and with much less glass; for the old great flood of light is no longer needed, and most of the work is done with concentrated lighting.

In the operating, two assistants are employed, to look after the camera and the plate-holders respectively, so that the photographer can give his whole case to inducing the sitter to do his or her own posing, and this he has reduced to a fine art. Even when dealing with a head or a bust portrait the seat is important, for it affects the whole carriage. A sitter who at once lounges when placed in a convenient-height chair, and who becomes awkwardly rigid if *told* to hold himself together, will carry his head and shoulders well and naturally if seated on a stool that is just a little too high. And if a shoulder droops, or if the pose becomes stiff and strained, it may be brought right again by placing a low footstool under one of the feet, by moving the position of the feet, or by simply asking the sitter to stand up and sit down again. If the sitter is told that these things are done to affect his pose, he shows effort and self-consciousness, but if he stands up to allow of moving (even an imaginary moving) of the seat, he acts naturally and without constraint. The same sort of thing applies to posing of the head and hands, and Mr. Jacolette is a master of the art which seems to be the greatest thing in fine photographic portraiture—of letting the sitter do his own posing, but making him, unconsciously, do it as the photographer wishes. This is an art which cannot be communicated. I might detail a dozen little methods practised by Mr. Jacolette, quite unobservable by any sitter who was not specially looking out for them, and successful in securing pose of chin, turn of head, direction and expression of eyes, and so forth, without giving one hint that another man could successfully use. The great thing is to realise that such an art exists and that it is valuable, then make your own little methods,—and to be really successful, make them new for every sitter and every sitting.

"Royal" hospitality has again been shown to Robert Demachy, whose one-man exhibition of eighty "gum" prints attracted many visitors even in the warm days of June and July. *Photograms of the Year* will say more about the pictures, and will reproduce them.

The Holy Shroud of Turin is responsible for a volume of 180 large pages (Paris: Chas. Mendel) from the pen of Dr. A. L. Donnadieu. In it the historic and technical evidence for and against the genuineness of the Shroud is reviewed at extraordinary length. And the verdict is:—That the image on the Shroud is probably an ordinary painting.

Herr Fritz Loescher, who writes the critique of German pictorial work for *Photograms of the Year*, is the author of a book on landscape photography—written in his native German, of course. It seems only a little time since his *Landschafts-Photographie* first appeared, but Herr Gustav Schmidt, the publisher, now sends us a copy of a second edition, slightly enlarged, and just as well illustrated as before.

Congratulations to J. C. Strauss of St. Louis on his being made an officer of the French Academy, an honor conferred by the Ministry of Public Instruction and Fine Arts on artists deemed worthy of special distinction. Mr. Strauss deserves some public recognition of his strong stand for a place for photography among the fine arts at St. Louis, and though the French appointment is not made for this, it is well not to lose sight of Mr. Strauss' labors in that connection.

Digitized by Google

CONSTRUCTIVE CRITICISM

BY EDITORS AND STAFF

A LANDSCAPE.

By W. A. Beevers.

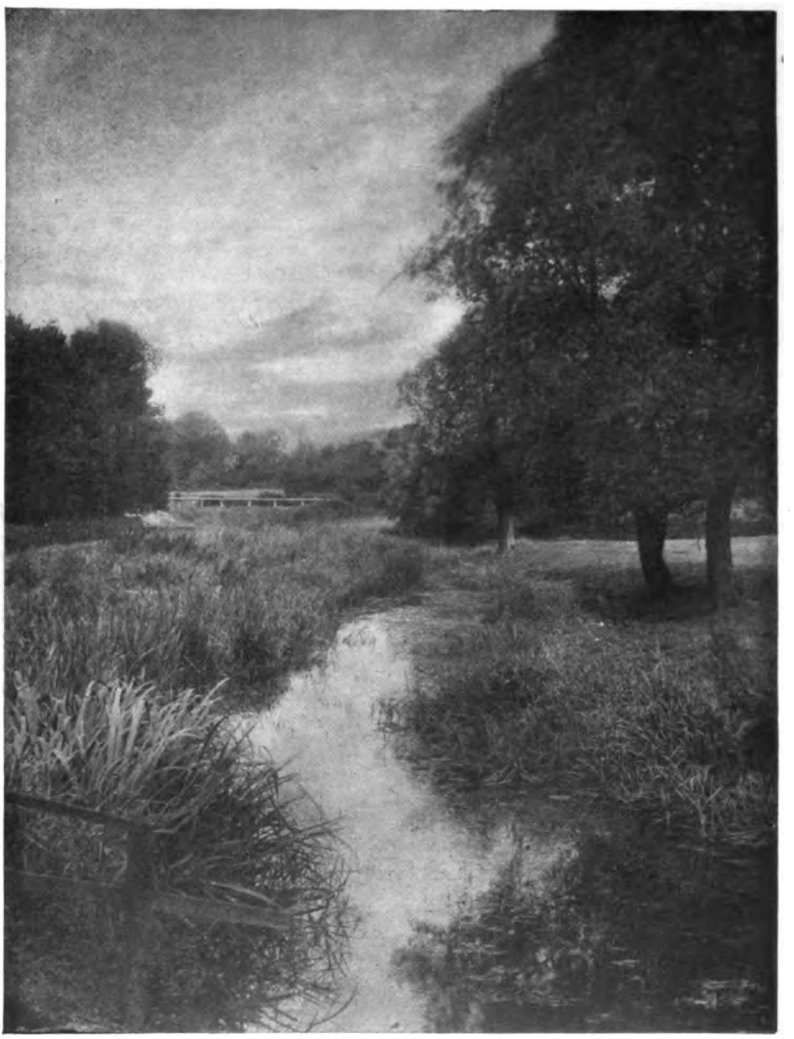
THIS is a much more promising subject than many submitted for constructive criticism, for it not only has good points to commend, and some small matters that might better have been done differently, but gives some scope for pro and con argument. It has a good strong foreground, with lines leading well up into the middle distance, and a good sky. The texture-rendering is good, and helps the lines to carry the eye well to the soft distance, and there is little fault to be found with the tone-rendering. Perhaps the first thing that strikes one is that the sky and the foreground are somewhat too evenly balanced. Then that the horizontal line A B (dissection scheme, p. 227) comes nearly in the centre of the print,

FIG. 2.

Digitized by Google

and rests upon a line C D which runs up the vertical centre-line, cutting A B at its centre, at right angles, and at a point which is emphasised by a line E D.

The first suggestion for improving the balance and removing that symmetry which is weakness * is to cut away about one third from the top.



LANDSCAPE (FIG. 1). *By W. A. Beevers.*

In doing this we lose nothing that is valuable from the sky, or from the trees, and I think that the general improvement of the picture must be apparent (fig. 2). We certainly have thrown the foreground into a prominence which it is interesting enough to justify, removed A B from its central,

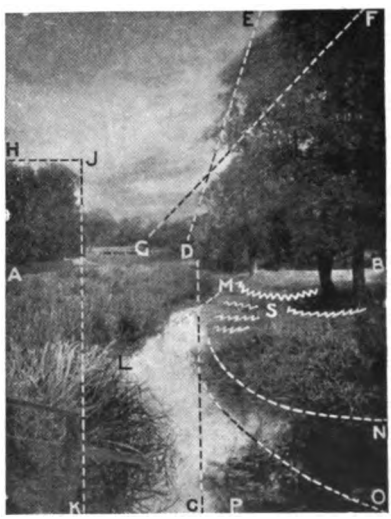
* See the illustrated "Suggestions to Would-be Picture-Makers" in *Photograms of the Year*, 1902 and 1903.—EDS.

Digitized by Google

FIG. 3.

weak position, and placed the distance in better relation to the whole. We have even modified the effect of the line C D by making the outline of the trees follow a line F G which directs the attention from, instead of to, the point D. Strengthening the foreground and throwing back the distance also tends to obliterate the line C D, because when objects appear to be at different distances from the spectator, they do not so strongly suggest that they are over each other, and joinable by an imaginary line. This increase in relief modifies another awkward line or shape, H J K, which is rather annoyingly rectangular in the original, but loses much of its hardness when the trees are thrown back.

Although the line C D is rendered less obtrusive, the high-light on the water asserts itself more than it did, and insists that in spite of its complementary bends it is an upright mass standing on the bottom edge of the print. An examination of the foreground shows that there is a rather heavy, lumpy mass of sedge-in-shadow on the left, and a corner full of reflected shadow of the trees on the right. Trimming off almost as much from the foot as we have done from the top suggests itself at once. It is a cheap expedient, and the result (fig. 3) gives us quite a new conception of the landscape,—a new composition. The line L M, which was lost in the general upright mass, now asserts its diagonal direction; and the water, which held its place merely by mass and position, becomes less aggressive, so that the little light patch of grass at D can assert itself, and becomes, by its position and contrast with its surroundings, almost the high-light of the picture. Our old difficulty A B is thrown back almost to the horizontal centre, the distance ceases to retire as it ought to do; and although



Digitized by Google

this composition might be modified into a satisfactory picture, I think we are better to return to fig. 2 and see what can be done without trimming. To remove the obviousness of C D we may strengthen the curve N of the junction between bank and water, and the curve O, along the edge of the tree-reflection, by strengthening the bits of light that already break up the reflection, and we may even suggest another small supplementary line in the same direction, by lightening a little of the shadow-reflection at P. The other corner may be helped a little by slightly lightening and slightly increasing the contrasts in the mass of flags and bit of fence.

We still have A B to bother us; and we have seen (when we cut down to fig. 3) that D had certain claims to be the high-light of the composition, but failed to compete with the line of lighted grass toward B, when thrown into relief by the hard tree trunks. The grass near B may be rubbed down on the negative until it reaches the general tone of the bank near M. The natural curved lines of the bank and water details marked by scribbles around S may be slightly emphasised by darkening, and will help to compensate the horizontal line and lead the eye into the picture and to its natural centre.

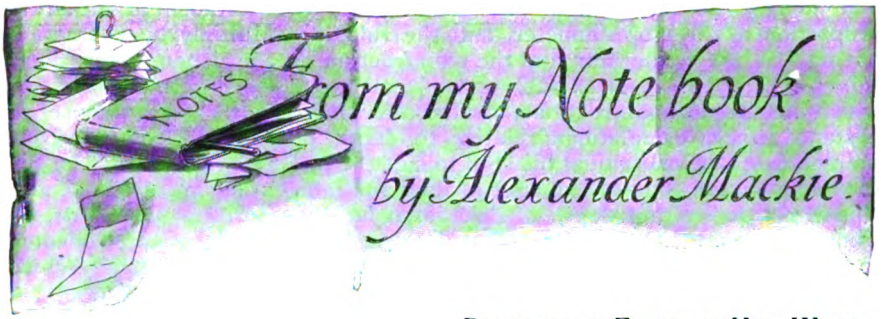
The left bank of the stream now needs some attention, to break up the straightness of L M and the monotony of the bed of flags between L M and A. This may be done by judiciously strengthening the shadows. The lights must not be increased, or they will interfere with our natural high-light at D, which may, in any case, need just a little strengthening.

By this time we shall probably be conscious that our main patch of water is rather blank and staring. It has detail in the negative, which only wants showing by rubbing down with alcohol or by the method described in *The Photogram* for June under the title of "Cloud Making with Persulphate." The would-be picture-maker who reaches this stage in such a problem as the one I have been examining, will probably next notice the light railing at G. Then he may realise that the sky needs some attention. Then that—but this is quite enough for one lesson.

JAPAN THROUGH THE CAMERA.

With many a camera—telephoto for preference—now at work in Japan we may well reproduce this month a couple of prints by readers of The Photogram *in the Land of the Chrysanthemum. Mere factual photographic record—when the subject is Japanese—gives a certain pictorial charm in the print: the crude photographic method, even when used without special aim at pictorialism, cannot destroy the peculiar natural grace of the Japanese people. The print on this page is by N. B. Scantlebury, that on page 233 by S. Nakai.*

Digitized by Google



Developing Films in Hot Water.

In developing a number of films in one dish, a certain amount of handling is generally necessary, and the effects of warm fingers are very liable to make themselves evident. This is especially the case when, in addition to the sensitive emulsion, the film is coated with gelatine on the back. By taking advantage of the hardening effect of formalin the manipulative difficulties may be overcome. A preliminary bath should be prepared, consisting of 1 part of formalin to 16 parts of water, say $\frac{1}{4}$ oz. to 4 oz. of water. Into this the films are to be placed one by one, taking care not to allow the last immersed to stick to the one underneath. The total time of immersion required is about four or five minutes; the warmer the solution the less the time required. Whether the action of the formalin has been carried sufficiently far may be judged by the gelatine having a leathery instead of a slippery feeling in passing the fingers over it. The films are then to be removed direct to the developer. Many forms of developer are available, but there are some that are likely to cause a stained film unless the formalin be removed by washing before development. Pyrocatechin and caustic soda answers well.

A useful formula is pyrocatechin 1 gr., sodium sulphite 10 gr., caustic soda $\frac{3}{4}$ gr., potassium bromide $\frac{1}{4}$ gr. to each ounce of water, but it may be modified to suit the occasion. A developer stronger in all the constituents acts more quickly and tends to give greater contrasts in the negative, and a weaker one the reverse. Pyrocatechin is a good "hot weather" developer, as it is singularly free from any tendency to produce fog. The formalin solution will keep in well corked bottles, and may be used repeatedly. It may be stated that the formalin takes an active part in the development itself; in combination with the sulphite of soda it performs as an accelerator.

Hyper-focal Distance.

All calculations connected with depth of field are based upon the hyper-focal distance: that is to say, the nearest point which must be focussed in order to obtain all objects behind it in apparently equally good focus, and this distance differs materially according to the focus of the lens, the size of the stop, and what is allowed as the diameter of the diffusion disc of a mathematical point. The diffusion disc for ordinary photographic work is usually taken at $\frac{1}{100}$ of an inch. The mathematical formula as given in the text-books is not a difficult sum, but my own adaptation of it reduces the calculation to one of mental arithmetic. I say my own adaptation, because I have never heard of any one else using it. It is: Square the focus of the lens in inches and take the result as feet. To be exact, there should be added half an inch for each foot. That will give the hyper-focal distance of the lens at $f/8$. For example, a 5-inch lens will be 5×5 in. = 25 feet + 25

Digitized by Google

half inches = 26 feet $\frac{1}{2}$ inch. For other stops the distance is in direct proportion to the stop diameter, and the rule is:—Multiply by a fraction having 8 as the numerator and the stop fraction as the denominator, thus: $f/4 = \frac{8}{4}$ or 2; $f/16 = \frac{8}{16}$ or $\frac{1}{2}$; $f/32 = \frac{8}{32}$ or $\frac{1}{4}$, and so on. The intermediate stops, which include decimal fractions, involve a few more figures. To the user of a stand camera calculations relative to depth of field are comparatively unimportant—he can adjust his stop to suit the picture as he views it on the focussing screen, but to the user of the hand camera they are all-important. The whole question of depth of field is so lucidly treated in *The Lens*, by Thomas Bolas, F.I.C., and George E. Brown, F.I.C., in the chapter devoted to the subject, that it is a very practical hint to refer my readers interested in the subject to the book.

Large Hand Cameras.

The difficulty in working a hand camera taking a fairly large plate is not mechanical but optical.

Increase of the size of the plate naturally involves increase in the length of focus of the lens employed. A lens of 5 inches focus used on a quarter-plate will include exactly the same amount of subject as a 10-inch lens used on a whole plate, but in choosing the stops necessary to secure the requisite depth of field a vast difference will be found. The relative depth of field of two lenses of different focus is in inverse proportion to the squares of their focus, and the relative depth of field of the two lenses above mentioned, using the same stop in each, will therefore be as 100: 25. That is to say, a 5-inch lens has four times the depth of focus of one of 10 inches. To equalise their depth of field, it will be necessary to use a stop of quarter the relative aperture with the lens of longer focus; that is, a 5-inch lens with $f/8$ will give the same depth of field as a 10-inch lens with $f/32$. From this it will be seen that the actual diameter of the stop of the 10-inch lens will be one half that of the 5-inch lens. $f/8$ of a 5-inch lens measures $\frac{5}{8}$ of an inch, $f/32$ of a 10-inch lens measures only $\frac{5}{16}$ of an inch. It is difficult to realise it, but it is a fact, that with two lenses of dissimilar powers to obtain the same depth of field a stop of smaller actual diameter is required with that of longer focus. It will be seen, therefore, that there is a limit to the length of focus of lens that can be practically employed in a hand camera for ordinary work, and therefore to the size of plate.

Drying Negatives Rapidly.

It is sometimes of great importance that a negative, after development, should be fixed, washed, dried, and ready for printing in the shortest possible time. The old-fashioned method of procedure was to immerse the negative, after a brief washing to remove the hypo, in a bath of methylated spirit, but this, even in the days when unmineralised spirit was procurable, was an uncertain method, as it frequently happened that on drying there arose an opalescence in the film which was only removable by rewetting. By the use of formalin the result may be attained with greater certainty and in less time. After fixing, a minute's washing under the tap or spray will remove most of the hypo. The negative is then to be placed for five to ten minutes in a formalin bath—one part of 40 per cent. formalin to 8 parts water will be strong enough—and again washed under the tap until water flows freely over the surface. The negative may then be immersed with impunity in hot water—it will stand even boiling water. After a few minutes' immersion, which will complete the removal of the hypo and will thoroughly heat the plate, it may be removed, and the surface moisture taken off with a cloth, and in a very short space of time the negative will be dry.

Digitized by Google

THE AGRICULTURE COMPETITION.

First prize (£1 1s.) withheld. Second prize (10s. 6d.), "St. Mungo" (Dan Dunlop, Motherwell).

QUANTITY, variety and technical excellence distinguished the mass of prints sent in for this competition—but of pictorial merit, anything like individuality of treatment or originality of selection, there was a deplorable deficiency. We asked for a "pictorial rendering of an agricultural operation," and the subject seemed in every way a hopeful one. The results, however, exemplify the peculiar dangers and difficulties of the work, instead of demonstrating its suitability for photographic treat-

HARVESTING. *By Dan Dunlop.*

ment. Distorted perspective of teams or groups of figures is perhaps the most general fault, suggesting the employment of a lens of too short focus. Too small a stop would seem to be largely used: the subject proper of many pictures failing in emphasis by competition with sharply rendered detail in the surroundings. Under these circumstances we are not justified in awarding the first prize, but the second falls to Mr. Dan Dunlop for a broad and effective rendering of reaping.

The series prize of £5 5s. remains at present in the hands of W. Foster Brigham, whose score is 8; with Clarence Ponting 6, A. J. Loughton 5, Chas. H. Evans 4, Jas. Meadmore 4, and Harry E. Staddon, 4.

The mounted copies of Mr. Percy Lewis's "A Fruit Boat, Venice," should reach us on August 1st, and, as we have before announced, the narrow border round the picture may be retained or wholly or partially trimmed off as the competitor sees fit, but the picture proper must not be cut down.

The competition for the month is "Clouds." The prizes are for the best photograms showing the shape, height, etc., of clouds. Last day, September 1st.

The "Fire" competition should be kept in mind by any photographer who has the opportunity to visit the scene of a conflagration. Further particulars of the prizes offered appear each month in the advertisement pages.

To Society Secretaries.—The sets of lectures offered by *The Photogram* to photographic and similar societies are increased this season by one on portraiture by Mr. C. H. Hewitt. Any set is sent out on payment of a moderate booking fee and the carriage of the slides each way. A circular of the lectures will be sent on request, and early application is requested of those who wish to make sure of certain dates. The lectures include:—"The Marvels of Photography," illustrated with some seventy slides, and suitable for a popular, even non-photographic, audience; "Night Photography," by Ellis Kelsey (with sixty slides); "The Beginning of Photography," by Geo. E. Brown (with fifty slides); and "Press Photography" (not illustrated).

Digitized by Google

SENSITOMETRY AND ORTHOCHROMATISM.

The collected Researches of Eder and Valenta.

BEITRÄGE ZUR PHOTOCHEMIE UND SPECTRANALYSE. J. M. EDER AND E. VALENTA. SOLD BY WILHELM KNAPP, HALLE. 30s.

THIS immense work, printed, together with the many excellent plates which adorn it, by the Technical College at Vienna, of which the authors are professors, contains the collected researches which, during a period of twenty years, have been carried on by the authors and their scientific collaborators. By far the greater portion of these researches have already been published, but as they have almost entirely appeared in a journal which it is somewhat difficult to obtain (*Sitz-berichte der K. K. Akadamie*, Wien), it will be a very great convenience to have this collection of the researches which have made their authors famous throughout the scientific world.

The book is divided into five parts. The first part, occupying about half of the entire book, consists of the collected researches in spectrum analysis, containing especially the extremely complete investigations of the spectra of argon and of sulphur, but the whole of the measurements in this portion of the book are classical, and form one of the main sources from which our tables of wave-lengths are compiled.

The second portion of the book consists of the papers relating to photo-chemistry. This section includes a hitherto unpublished paper on Solarisation. After a description of many interesting facts regarding light-sensitive bodies the rest of the section is occupied with the researches upon which Dr. Eder's system of sensitometry is based.

Most of these researches have already been republished in the *Handbuch per Photographie*, 3rd part, 5th edition, while a French translation of them by M. E. Belin was issued last year under the title *Système de Sensitometrie des Plaques Photographiques*. Inasmuch as this system of sensitometry is of very great photographic interest, some description of it may be of use.

It has frequently been stated that this system employed by Dr. Eder is closely allied to that devised by Messrs. Hurter & Driffield. As a matter of fact Dr. Eder's system is very much more like that of Mr. Warnerke, consisting as it does of a measurement of the smallest exposure which can affect a plate. Dr. Eder discusses Messrs. Hurter & Driffield's method of measuring the inertia of a plate, but states that it is impossible to obtain accurate results, owing to great fluctuations and uncertainties, and he ascribes the absence of these fluctuations in Messrs. Hurter & Driffield's work to the inaccuracy of their experiments. It is, however, generally agreed in England that greater accuracy in experiment leads to greater accuracy in the determination of the inertia, and as Dr. Eder refers to the use of bromide in the developer while free bromide is of not infrequent occurrence in German and Austrian plates, it is by no means impossible that Dr. Eder's uncertainties are simply due to the presence of potassium bromide.

The method employed by Dr. Eder for determining the sensitiveness of a plate is to revolve before the plate a sector wheel (termed a Schiener wheel), so cut that there are twenty-three angles, each being 1·27 times the preceding one. This is rotated in front of the plate at a speed of from 400–800 revolutions per minute, while, at a distance of one metre, a benzene lamp is allowed to illuminate the plate through the wheel for sixty seconds. After development and fixing, the lowest possible number is read off and is stated to be the speed of that plate. Thus this method of measurement is a systematised Warnerke method, using a rotating disc instead of the scale sensitometer.

In the region of orthochromatic sensitometry, however, Dr. Eder has worked out a completely new method. This consists in measuring the relative sensitiveness of the plates to the blue light given through a filter of 2 per cent. sulphate of copper in ammonia solution, and the yellow light of a 4 per cent. solution of neutral chromate of potash.

The relation of the resulting sensitiveness gives the orthochromatic properties of the plate.

This method appears to be far in advance of anything hitherto practised, though it can scarcely be said to be final, allowing, as it does, nothing for exceptional red sensitiveness.

The third part of the book is devoted to a discussion of the behaviour of the silver salts towards the spectrum and of color sensitisers.

This contains a great mass of researches upon the color sensitiveness conferred by dyes upon silver bromide, researches of which the practical application has as yet scarcely been touched, but which will indubitably take a very high place in the literature of the subject.

The fourth part of the book consists of one paper, Spectroscopic Studies in Photographic Three-color Printing, which is remarkable as being probably the most important paper published upon three-color printing, and is distinguished in this book by the remarkable beauty of the plates.

Digitized by Google

The fifth part consists of four papers by Dr. Valenta on printing colors.

In conclusion, this volume is of great value, inasmuch as it presents in a convenient form all those papers of Eder and Valenta which have been for many years authoritative upon their subjects, while the many magnificent plates and spectrum charts will be of the greatest service to the practical physicist. C. E. KENNETH MEES.

What's What

A Hand-Camera Hint. — No doubt there are many amateurs possessing glass plate hand cameras who, like myself, have been puzzled by most unaccountable markings on their negatives. These markings take all sorts of shapes — parallel lines, triangles, semaphores, daggers, etc., and usually occur where least wanted. The other day I saw the marks on a reproduction of a photogram in a photographic dealer's catalogue. Their appearance on my negatives caused me no little annoyance and worry. I sent both negatives and camera back to the makers, and both the plate-makers and opticians could not solve the problem. The plate-makers could not blame my developing, and the opticians were quite satisfied that the camera was not at fault. I determined to find it out for myself, and succeeded. The fault lay in the sheaths. After being in use for some time they get out of shape and dirty, and of course the face of a plate getting into contact with the back of the sheath in front of it gets marked. This is made worse if a long journey is being made, as the plates are apt to be jolted about whilst lying in the well of the camera. To remedy this I got a pair of pliers and slightly bent the grooves outwards at each corner, and have found it effective. A better plan would be to put a couple of cardboard bearers at the back of each sheath, where they would be between the sheath and grooves of the next sheath. Of course the camera will only take ten or eleven plates after such treatment, but in a good many cases that is not a bad fault. I thought that the extra space between the sheaths might cause fog, but am happy to state that I have neither had scratched nor fogged negatives since trying the above.—J. ROBERTSHAW.

JAPAN THROUGH THE CAMERA. *By S. Nakai.*

A Conference of Salon Secretaries, the excellent step originally suggested by Robert Demachy in *Photograms of the Year*, has been held at The Hague, and the presence of Alfred Stieglitz on this side of the Atlantic should materially affect the immediate future of exhibition policy. The invited delegates included Demachy, Stieglitz, Ernst Juhl, and others.

The Pictorial Harvest of the year has begun to reach us, and the first sheets of *Photograms of the Year 1904* will go to press early in August. We wish to see examples of the work of all picture-makers, whether they intend to exhibit or not, that we may make *Photograms of the Year* fully representative. Those who intend to exhibit may send their pictures to us, in good time, and we will deliver them to the exhibitions on their receiving days.

On the Continent, at almost every important tourist centre, *The Photogram* may be obtained from stock. No other photographic journal has organised such a complete scheme of distribution, and although it has been much appreciated by our travelling readers during the past two summers, this reminder may be useful to some who are now starting for abroad. The list of agents will be found among this month's advertisements.

P.S.—Photography on Tour is a little gem. Pocketable, practical, priceless. Limp cloth, one shilling.

Digitized by Google

Figure-in-Landscape Photography, as described in articles in our May issues for last year and this year, is gaining quite a vogue. The Watford Society, which has just held its second competition outing on these lines, says: "The idea is excellent, and will become an annual feature. In addition to milkmaids and farm hands, we had a cow and some horses, which, if somewhat troublesome, added to the interest." The Manchester A.P.S. has held its second "outing with a purpose," and had a successful special meeting for discussion of the results of the outing. The Rev. Henry W. Dick and Messrs. T. Longworth Cooper and J. W. Wade arranged to open the discussion. The Birmingham P.S. has had a garden party, in which the models were —1. A dairymaid and cow; 2, group of four, in Old English costume; 3, a man in a smock frock. They offer silver and bronze medals (gifts of the president) for the best sets of three prints, and claim absolute originality for the idea.

"The Photogram" Award. One-half actual size.

Many slides from "The Photogram" society competitions of last year were shown at the Photographic Convention to illustrate some notes on Figures in Landscape by H. Snowden Ward.

A reproduction of the award offered to societies and independent parties holding such outings is reproduced on this page.

The Photographic Convention of the United Kingdom, after a most enjoyable week in and about Derby, has decided to visit Dublin next year. The hosts will be the Photographic Society of Ireland, and the president-elect is Prof. J. Joly. Sir Howard Grubb, who was president of the Dublin Convention in 1894, strongly supported the invitation and will probably entertain the members. Notable features of this year's meeting were the exhibition by members of the Professional Photographers' Association; the exhibition of work of members of the Convention; and the extensive and very fine display of prints by American professionals in the exhibits of the Platinotype Co. and the American Aristotype Co. Kodak, Ltd., J. J. Griffin & Sons, and the Adhesive Dry Mounting Co., Ltd., also made very interesting displays and demonstrations.

The Scottish Federation "Blue Book" is the "Red Book" of the North, and smaller even than the R.P.S. publication. Its production is another outward and visible sign of the enthusiasm and foresight of the Scottish secretary, Mr. John B. Maclachlan.

"Photographic Chemicals," by W. Taylor (London: Iliffe; 1s.).—A volume describing the home preparation and properties of the chief "photographic" chemicals. Photographers with a taste for scientific pastime will appreciate the author's directions and drawings of apparatus.

Tri-color Pigment Print.—M. Léon Vidal has collected in one volume (*La Photographie des Couleurs*; Chas. Mendel, Paris) his recent writings on the practical methods of printing in carbon from the set of three-color negatives. What he has to say is strictly on matters of manipulation and practice, and his methods are revised so closely to date as to include the new tri-color pigment films of the Rotary Photographic Co.

"The Year-book of Photography, 1904" (*The Photographic News* Office; 1s.) preserves the popular features of former years, namely, a collection of questions and answers, a gazetteer of holiday resorts, tables and formulæ compiled by E. J. Wall, and two big leading articles on practical subjects. These are the After-treatment of the Negative, and "For the Ideal in Development," by C. Winthrope Somerville. The latter reviews the difficulties and limitations in the development of dry plates, and speculates ingeniously on causes and remedies. The student of the why and wherefore of photography will learn much from it, though he may be surprised to see the statements that J. B. Reade discovered the solubility of silver chloride in "hypo," and that the restraining action of citrates is no older than 1894.

A French "Ferric and Heliographic Processes" (*Les Tirages Photographiques aux Sels de Fer*. By E. Trutat. Paris: Gautier-Villars. 1 fr. 25).—"Les procédés aux sels de fer sont les procédés de l'avenir," says the author on the thirtieth and last page of this little brochure on iron printing processes. With true Gallic enthusiasm he is certain that methods of printing by aid of iron salts are destined to oust your silver or bichromate processes from the field. We prefer to wait awhile. In the mean-

Digitized by Google

time the (photographic) iron age is hastened by this very practical manual of M. Trutat. It is not for the "blue-printer" or "photo-copier" who duplicates engineers' tracings by one or other of the iron processes. It aims at instructing the amateur in the home-preparation of printing papers, alike inexpensive and effective. "And rivalling gum-bichromate in elasticity," says M. Trutat. The blue print or ferroprussiate pure and simple is dismissed at no great length, though two whole pages are wasted in giving methods for toning the blue image to black or brown. Methods there are in plenty, it is true, but none which we have ever found of any practical use. As a size for papers to be iron-sensitised, M. Trutat prefers to all others a water varnish made by dissolving bleached shellac by boiling with a solution of borax and carbonate of soda, the raw paper being immersed in the mixture for about one hour, and then hung up to dry.

The chief part of the monograph concerns what is known as the Kallitype or sepia process, invented by Dr. W. W. J. Nicol, supported by the late W. K. Burton, and lately improved by Hall in America and Namias in Italy. M. Trutat mentions only the last named, but his formulæ show him to have studied the process from first to last. Our readers with a taste for experiment will find directions and prescriptions enabling them to take up a valuable although neglected process.

"Advanced Hand-Camera Work," by Walter Kilbey. The growing importance of the hand camera, not merely in number, but in its uses as an instrument for all photographic purposes, is a fact which we have constantly kept before us. The articles by Mr. Kilbey now appearing are one proof of our earnest in this respect. We desire to keep prominent the practice of such workers in the front rank as J. A. Sinclair, who, writing of "fallacies" in the Jubilee number of *The British Journal of Photography*, says:—"When constructed, as the highest class instruments are constructed, the hand camera does nearly all that stand cameras will, and also much more, and work of greater moment. It records the actual life of the race with greater ease and efficiency than the tripod camera, and if it is handled with prescient decision, I conceive the results will be as pictorial as those produced by the more unwieldy instrument. 'We needs must love the highest when we see it,' and as I believe the hand camera is the best, I must confess it is good enough for me. Other instruments fail because they are slow in action." To put before those workers who would apply the hand camera to more serious uses, we have prevailed upon Mr. Kilbey to do—in book form, and therefore more abundantly than is possible in articles—for the reader what he has done by personal instruction for many a friend or colleague. *Advanced Hand-Camera Work* (issued by our own publishers for 1s. nett. postage 2d.) is the result. The sub-title "and focal-plane photography" is added, for in the nature of things the focal-plane shutter enters largely into work of the advanced order, and the fact that no book has hitherto dealt with this important piece of apparatus is one of the facts on which the new manual bases its right to appear. For Mr. Kilbey, as most people know, is as familiar with focal-plane work as anybody, and his notes on the difference in apparatus and the right and wrong ways of working should therefore command a careful reading. *Advanced Hand-Camera Work* appears uniform in production with the beginner's book by the same author, *Hand-Camera Photography*, and with the universal *Figures, Facts, and Formulæ*.

Books Received.—*Dictionnaire de chimie Photographique*, by G. and Ad. Braun (Paris: Gautier Villars). Parts II. to V. of this serial work, which we have already been able to commend. The fifth number is chiefly on the salts of iron.—*Le Procédé à la gomme Bichromate*, by C. Puyo (office of *Le Revue de Photographie*; 1 fr. 25). M. Puyo is practical and to the point whatever he writes on, and this tasteful little volume, in which he relates his own method in "gum," is assured beforehand of a welcome for that reason. We hope to see it followed by other manuals with the *Revue* hall-mark of excellence.—*Die Chemischen Reaktionen im Hydrokinon-Entwickler*, by C. E. Kenneth Mees and S. E. Sheppard. A reprint from *Zeitschrift für Wissenschäftliche Photographie*. Let us blush for shame, *pro* ourselves and our contemporaries, too, that Messrs. Mees and Sheppard, who are members of the R.P.S. and are doing their research work in an English University, should have to go to Germany to get their papers published. *Report of the 32nd Congress of the German Photographic Union* (Weimar: K. Schwier). — *L'Année Photographique*. By L. P. Clerc (Paris: Chas. Mendel; 3 fr.). The fifth issue of M. Clerc's excellent summary of the year's progress in technical photography.—*Die Herstellung von Diapositiven* (Berlin: Gustav Schmidt; M.2.50). A treatise by Paul Hanneke on lantern slide making by all the processes—gelatine, collodion, albumen, and carbon, with chapters on toning, coloring, and other forms of after-treatment.—*Photography in Colors*, by R. Child Bayley (Iliffe; 1s.). Second edition.—*The Photographic Reference Book* (Iliffe; 1s. 6d.). Second edition.—"*London Record*," a new weekly journal of London doings, is freely illustrated, by photography, and manages to live up to the motto on its cover, "a triumph of pen and camera." We welcome it as a departure in the "illustrated weeklies" which justifies its existence.

Digitized by Google

FORTHCOMING EXHIBITIONS AND COMPETITIONS.

Particulars of Exhibitions are given when first announced, and again when it is time for entries to close. Will secretaries who wish insertion please mention details below, and note that last day is 12th of each month for publication on 25th? The Editors will feel grateful for the Exhibition catalogue as soon as published.

En.=Entries. Pic.=Pictures. Ex.=Exhibition. G.=Gold Medals. S.=Silver Medals. B.=Bronze Medals. O.C.=Open Classes. Sec.=Secretary.

(1) *The Photographic Salon.*—En. and Pic., Sept. 5. Ex., Sept. 16 to Nov. 5. Sec., Reginald Craigie, Dudley Gallery, Piccadilly, London, W.
(2) *Royal Photographic Society.* Ex., Sept. 22 to Oct. 29. En. and Pic., Sept. 8 or 9. Sec., A. W. W. Bartlett, 66 Russell Square, W.C.
(3) *Photographic Society of Ireland.*—Ex., April 3 to 15, 1905. 1 O.C. G., S. and B. Sec., R. Benson, 3 Orwell Park, Rathgar, Dublin.
(4) *Ipswich C.C.*—Ex., Nov. 15 and 16. 4 O.C. S. and B. Sec., R. H. Sutton, 37 Henley Road, Ipswich.
(5) *Rotherham P.S.*—Ex., Oct. 19 to 22. Sec., H. C. Hemmingway, Tooker Road, Rotherham.
(6) *Ilford and District P.S.*—Ex., Nov. 1904. Sec., W. N. Beal, Thorold Road, Ilford.
(7) *Frome M.I.P.S.*—Ex., Nov. 3. Sec., B. J. Mitchell, 3 Willow Vale, Frome.
(8) *Hackney P.S.*—Ex., Nov. 9. Sec., Walter Selfe, 70 Paragon Road, Hackney, N.E.
(9) *Hove C.C.*—Ex., Nov. 23 to 25. Sec., A. R. Sargeant, 55 The Drive, Hove.
(10) *Isle of Thanet P.S.*—Ex., Nov. 24 to 25. Sec., G. W. Simmers, Aberdeen House, Ramsgate.
(11) *Southsea P.S.*—Ex., Dec. 2 to 8. Sec., F. J. Lawton, 20 Clarence Square, Gosport.
(12) *Muirkirk A.P.S.*—Ex., Dec. 8 to 10. Sec., W. Barrowman, Ayr View, Muirkirk.
(13) *Southampton C.C.*—Ex., Dec. 13 to 20. Sec., S. G. Kimber, Vandene, Highfield, Southampton.
(14) *Wishaw P.S.*—Ex., Dec. 28 to 31. Sec., Robert Telfer, 138 Glasgow Road, Wishaw.

Ensign Films.—£20 per month during July, August, September and October for the greatest number of spool labels. Circular from Houghtons, Ltd., 88 89 High Holborn, W.C.
Thornton-Pickard.—£100 in prizes. Thornton-Pickard Co., Altrincham.
Luna.—£240 in prizes. Lucien Allègre & Co., 59A New Oxford Street, London, W.C.
Coxin.—68 prizes in apparatus. W. Butcher & Sons, Camera House, St. Bride Street, London, E.C.
Barnet.—£500 in prizes. Elliott & Sons, Ltd., Barnet, Herts.
Ilford.—£750 in prizes. Ilford, Ltd., Ilford, E.

New Catalogues and Price Lists.—*O. Sichel & Co.*, 52 Bunhill Row, London, E.C.—Latest novelties, including the Sickle double extension roll-film camera, a new non-slipping printing frame, iso screens, etc. Sent free.

E. Merck, 16 Jewry Street, E.C.—List of chemicals, 78 pages. We find Merck's list constantly useful for reference. Sent free.

Warwick Trading Co., 4 and 5 Warwick Court, High Holborn, London, W.C.—The "Green Book" of latest cinematograph films and apparatus. Sent free.

Sanders & Crowhurst, 71 Shaftesbury Avenue, London, W.—All kinds of apparatus, but particularly hand cameras and enlargers. We are glad that special prominence is given to the excellent Southport "Enlarging Table."

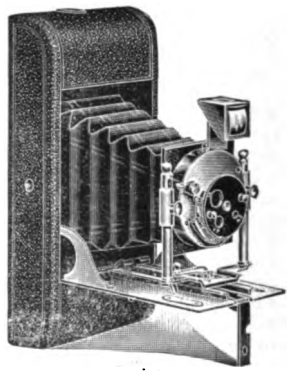
Self-toning Aristo Post Cards.—This self-toning paper, mentioned last month, is now issued by the Kodak Co. in post card form in shilling packets of ten cards and two masks. We have used no finer self-toning paper than Aristo.

Post Cards.—Messrs. Hood & Co. of St. Bride Works, Middlesborough, send us specimens of the half-tone cards they are issuing for photographers and dealers from their own prints. They will make the blocks and put the job through, and the work is really good and attractive. The half-tone card is cheap as post cards go, but Messrs. Hood show that it need not be nasty. We would rather have a good half-tone than an indifferent collotype; indeed much good half-tone is equal to average collotype. We advise those wanting post cards to write Messrs. Hood for prices and samples.

Combined Bath ready for use is now placed on the market in convenient crystal form by The Bayer Co., 18-20 Booth Street, Mosley Street, Manchester. The contents of the package have simply to be dissolved in water and then yields fine rich tones with ordinary commercial P.O.P.'s. We can record our own pleasure at the clean way in which the product goes into solution, betokening the care and purity of preparation, which indeed is implied by the name of the manufacturers. The toning properties of the bath are no less satisfactory, and we can recommend the Bayer product a reliable combined bath. The price of the "Combination Gold Salts," as Messrs. Bayer call them, is from 1s. (sufficient for 9 oz. of bath) to 3s. (for 35 oz.).

Merck's Annual Report (1903) reaches us from 16 Jewry Street, and like its sixteen predecessors, presents a review of progress in therapeutic chemistry and, in one or two instances, in photography. It is sent free.

The Folding Scout.—Messrs. Houghton's pocket edition of the Scout 5s. camera is quite wonderful value for a guinea. Taking roll film 3¼×2¼, it has focussing scale,



rising front, time and instantaneous shutter, rotating diaphragms and brilliant reversible finder. These technical virtues are concealed within a fair exterior, and the camera is certainly of "pocket" dimensions.

Luna Post Cards.—Quite "artistic," like the Luna papers, are the post cards sensitised in the same manner and now issued in shilling packets of ten by Messrs. Lucien Allègre & Co. of 59A New Oxford Street, W.C. The cards have pulled edges, and this, in conjunction with the red to black tones to which the paper specially lends itself, distinguishes the Luna card from the innumerable others on the market. Messrs. Allègre notify us of a modification of the toning formula:—for black tones on all grades of paper, use the solution in its normal condition, but for all other tones dilute with three times the quantity of water.

Digitized by Google

The Kodak Competition, which closed on June 30th, has brought prints by the thousand to Clerkenwell Road, and it will be some little time before the results will be known, as the preliminary clerical work is very considerable.

"Rajar" and "Cleron" Specialties.—The robust offspring of the Brooks Watson Daylight Camera Co. have now a London house in High Holborn, at the corner of Southampton Row. A handsome and spacious suite includes offices, stock room, dark-room, and dealers and others can here witness demonstrations of the Rajar system of photography.

Focal-Plane Cameras by Messrs. W. Butcher & Sons.—Two patterns of focal plane camera, at remarkably moderate prices, have been placed in our hands by Messrs. Butcher with the request to test them and report our experience. This we have done in the case of the "No. 1" instrument, and have been impressed with the very convenient and workmanlike construction of the camera. The shutter, as the chief feature, first claims our notice. It has an opening the full width of the plate and four narrow ones ranging from about $\frac{3}{4}$ of an inch to about $\frac{1}{8}$ of an inch. Any one of these slits is brought into exposure by winding up the blind, and the slit in position at any given time is shown by an indicator. Moreover, a tiny lever by the side of the winding key arrests the winding of the blind at a certain point, so that it is impossible to use one slit instead of another by inadvertently turning the

winding key too far. But by moving this same lever $\frac{1}{8}$ of an inch we can wind up to any desired slit in a few moments. This range of apertures in the blind provides for a considerable variation in posure without calling into use the additional factor—tension of the spring. Thus with the spring at the lowest tension, shown as 1 in the indicator, the exposures are $\frac{1}{25}$, $\frac{1}{50}$, $\frac{1}{100}$, $\frac{1}{200}$, and this adjustment is a very good one for average work in streets. For more rapidly moving objects, such as sports and athletics, the spring may be kept at 4, and then the range of exposures is $\frac{1}{50}$, $\frac{1}{100}$, $\frac{1}{200}$, $\frac{1}{400}$. It is useful to remember that each slit gives half the exposure of the next one higher up on the blind. The shutter is provided with both trigger and pneumatic release.

In construction the camera is plainly shown in the figure. It extends rigidly on four nickelled struts; there is some rise of front, and the lens—an Aldis anastigmat, working at *f*/6—is mounted in a focussing jacket. The dark slides are thin metal ones, each holding one plate, and in our experience, absolutely light-tight when the shutter is withdrawn for exposure. Out of a number of plates, in exposing which the slides were intentionally handled in brilliant sunshine, not one showed a sign of fog. A view finder of the direct vision type and a focussing screen with folding hood complete the outfit, the cost of which is £5 10s., complete with six slides.

The No. 2 camera is a long extension pattern for lenses from 3 in. to 12 in. focal length, and is advised by Messrs. Butcher for press work, such as the photography of athletic and other sporting events. It carries the same shutter as in No. 1, and is a substantially built instrument with considerable rise of front. Sent out with three double slides of book form, its price is £4 10s. without a lens; in quarter-plate size, 5×4, £5. Any lens can be fitted.

P.O.P. Post Cards and other printing is the business of Corney & Aldhouse, 122 Avenue Road, Acton, W., from whom we have received several excellent samples of their work. One specialty is P.O.P. post cards at 1s. 6d. per dozen from any negative.

The "Osico" Camera, for films and plates, is a neat folding camera supplied by O. Sichel & Co., 52 Bunhill Row, London, E.C. Resembling folding film cameras in general, it differs from many in possessing a focussing screen and plate-holders, which register with the roll film, no adapter being thus required.

The price of the camera with three single metal slides is £2 12s. 6d. in quarter-plate size.

A Useful Attachment.—Messrs. A. E. Staley and Co. are now supplying a little accessory of inestimable value to users of the Bausch & Lomb Unicum shutter. It is a stop which enables the user to open the shutter for focussing without altering the setting of the shutter. In the old way it was necessary to set the shutter for time, open it for focussing, and again set it at the time required to make the necessary exposure.

When using this stop, it is simply necessary to set the shutter, drop the hinged piece and release the trigger, when the shutter is fixed open, and will remain so for any period. After having focussed, you simply raise the hinged piece, and the shutter is ready to be used at the desired speed.

The price of the stop is 1s., postage extra, from Messrs. Staley, 19 Thavies Inn, Holborn Circus, E.C.

The "Sickle" Focal-Plane Camera (O. Sichel & Co., 52 Bunhill Row, London, E.C.) is one of the new competitors for the favor of focal-plane workers, and a very handsome, substantial instrument it is. The shutter has a slit adjusted by hand by a gear of cord, an arrangement which is remarkably simple, and even should it get out of order can be repaired by the photographer himself. The shutter works up to the very highest speeds. For time exposures the lens is fitted with a Bausch & Lomb Unicum shutter, and we can strongly endorse the selection by Messrs. Sichel of this plan, for in our experience the focal plane shutter, unless balanced with extreme delicacy, is not free from liability to jar the camera on opening. As regards the other fitments of the camera, we can best describe them as modelled on American lines of portability and British notions of solidity. There are two finders, a brilliant and a direct rising front, and focussing scale, and the apparatus costs, complete with Beck lens working at *f*/6·8 and three dark slides, £6 in 5×4 size. A fine instrument.

Pigment Prints without Transfer.—A new paper for sensitising with bichromate is now being supplied by Messrs. Chas. Zimmermann & Co., 9 and 10 St Mary-at-Hill, E.C., under the name "Crossed Swords Pigment Paper." The advantages claimed for it are:—

No transfer.
Cold development.
No bichromate poisoning.

The paper is sensitised by quickly brushing over with bichromate solution. It thus dries very quickly, and the bichromate is in the colloid coating, not in the paper also. Printing is timed with an actimometer, and the print, after a brief soak in cold water, which washes out the unaltered bichromate, is treated for one minute with weak acetic acid and is then ready for development. This is done by pouring over it a cold "broth" of sawdust and water, made very slightly alkaline with potass carbonate. There is considerable latitude in the process, for cases of under-exposure can be sent back to a warmed acetic bath, and are then amenable to development. The final process is a washing of half an hour in clean water.

In its results the process is more akin to "gum" than carbon, and indeed its manipulation, as above outlined, is that of "gum." To say that it achieves, without any difficulty, results which the struggling gummist sees before him but cannot reach, is to convey a wrong impression in many minds: "gum" to many persons meaning splodges of color and patches of high-light. The pigment prints, however, are full of fine detail, and their surface is a delicate matt. When working to instructions, the normal result may be so described. The desire for personal control may suggest hot water and brush development, but how successful these measures will be we cannot say. As it is, here is an extremely simple and inexpensive direct pigment process, a dozen 5×4 pieces of paper (black, green, olive, blue, red, chalk or sepia) costing 10d. Post cards, 1s per dozen.

Digitized by Google

In Bournemouth a new dark room has been opened by J. E. Beale, the "Fancy Fair," where plates and other requisites are stocked.

An error crept into the measurements given of the enlargement by Dr. J. H. Smith & Co. illustrated last month. The height should have been given as 7 ft., not 3 ft.

The Chrono at St. Louis.—Messrs. L. Gaumont & Co., 22 and 25 Cecil Court, Charing Cross Road, inform us that their "Professional Chrono." which was the only bioscope machine to obtain the highest award at the Paris Exposition of 1900, has recently been selected by the United States Commissioner of the St. Louis Exhibition of 1904 as the only cinematograph machine to be used in connection with the exhibition.

Eastman Kodak Company.—The usual quarterly dividends of 1¼ per cent. (being at the rate of 6 per cent. per annum) upon the outstanding Preferred Stock, and of 2½ per cent. (being at the rate of 10 per cent. per annum) upon the outstanding Common Stock, have been declared by the Eastman Kodak Co. of New Jersey, payable on July 1st, 1904, to stockholders of record at the close of business on the 31st May 1904.

Houghton's, Ltd., en fête.—The staff outing of the Holborn and Hatton Garden offices of Houghton's, Ltd., took place on Saturday, July 2nd, to Broxburne-on-the-Lee, where a day was spent in athletics and other amusements. Mr. George Houghton presided at the luncheon, and a series of sports occupied the large company for nearly the whole of a long and enjoyable day. The prizes were distributed by Mrs. E. D. Smith.

The Cyko Competition.—In order that intending participants in the advantageous offer of Cyko cameras may see the actual cameras, Messrs. Griffin have arranged for the instruments to be on view at the following agents, from whom all other particulars can be obtained:—

London—City, Benetfink & Co., 107 and 108 Cheapside; London—West End, London Stereoscopic Co., 106 and 108 Regent Street; Aberdeen, J. Henderson, 164 Union Street; Bournemouth, F. W. Hornby, 132a Christchurch Road; Bradford, T. C. Bridges, 6 Charles Street; Bristol, Hodder & Co., Ltd., Wine Street; Cambridge, Beall & Sons, 25 Sidney Street; Manchester, J. T. Chapman, Albert Square; Reading, Tunbridge & Wright, 84 Broad Street; Salisbury, Atkins & Son, Market Place.

Tibet.—Messrs. Kodak, Ltd., inform us that a most interesting series of pictures illustrating the experiences of the British Expedition now in Tibet has been sent in to them by Lieut. F. M. Bailey of the Pathan Mounted Infantry. They were taken with the No. 3, a Folding Pocket Kodak, on the N.C. film, and besides being excellent as pictures, they are important as records, and doubtless reproductions of them will find their way into the leading illustrated weeklies.

Amongst the prints is the noted Chinese, Colonel Ma, mounted on his charger and looking as fat and happy as though he were conducting a picnic and had not a care or worry on his shoulders. Another is a photogram of the 32nd Pioneers taking possession of the Tibetan stronghold of Gyangtse. On the more peaceful side is an admirable view of Chumolkari, a snow-covered mountain 24,300 feet high, photographed against a blue sky, a rather severe test of the orthochromatic qualities of the N.C. film in use without a yellow screen.

TRADE INTELLIGENCE.

Business Changes, Changes of Address, etc.—*Chas. Sweet* is shortly moving to a new studio in 19 Battery Place, Rothesay.

Messrs. A. Rosenberg & Co. have moved from Southampton Row to 259 High Holborn, W.C.

Andrew & Co. have purchased the business of F. W. Freeman, 7 Park Hall Place, East Finchley, N.

CONSTRUCTIVE CRITICISM OF PRINTS.

Prints—submitted one or two at a time—will be carefully and suggestively criticised. They must be mounted and enclosed in a wrapping which is stamped and addressed inside so that it can be returned to the sender by simply refolding the paper. A piece of tissue paper should be gummed to the edge of each mount, folded over to cover the print. Suggestions as to trimming can then be pencilled on the tissue.

We beg the sender to say whether we may reproduce criticism and picture, with or without the artist's name, if we consider them of general interest.

Address—"Constructive Criticism," The Photogram, Effingham House, Arundel Street, London, W.C.

BE BRIEF!—*We reserve the right of condensing all correspondence, but undertake to leave the meaning intact.*

Personalities barred. Whenever a man's opinions are attacked, with mention of the man's name, we wait until a proof can be sent, and the attack and reply published together.

Anonymous letters are strongly objected to, and those which are not ACCOMPANIED *by name and address of writer, for our own information, go into the W.P.B.*

A Correction.

DEAR SIRS AND MADAM,—On page 189 of the July number of *The Photogram* a list of labels is given in several languages. The Italian one is: Piastro fotografiche sensitive. This being not Italian at all, must be modified so:—Lastre fotografiche sensibili, and add: non aprire che all' oscuro (open only in the dark). In the Spanish label the article *Las* can be left with advantage.—Please excuse the correction and believe me, yours truly,

ARTHUR GANDOLFI.

Geneva, Switzerland.

A Copper Bichromate Process.

DEAR SIRS AND MADAM,—*Re* the copper bichromate process and your note in Correspondence, p. xiv., *The Photogram* for July, no doubt your correspondent refers to a process I wrote about a few years ago in which copper and bichromate were mixed and then developed with pyro (Jan., 1899, p. 24). C. E. BENHAM.

The Holostigmat.

DEAR SIRS AND MADAM,—With regard to the reference in the July issue of *The Photogram* relating to *f*/ Nos., we should like to point out, firstly, that our Holostigmat is not an unsymmetrical lens in the sense in which the Stigmatic is. The Holostigmat is built on the symmetrical principle, but allows of components of different sizes being combined, making so-called "hemispherical" combinations Moreover, owing to its convertible properties, we engrave all Holostigmats with *f*/ Nos. for the separate components, so that there is no need of using the process recommended in your note.—We are, yours faithfully,

W. WATSON & SONS.

PRINCIPAL CONTENTS.

Natural History Photography.
Mounting the Exhibition Print. By Fredk. H. Evans.
Advanced Hand-Camera Work. By Walter Kilbey.
Six-Plate Promenades.—IV. Westminster. By H. Springall.
The Portrait and the Studio.—VI. Martin Jacolette.
Constructive Criticism.
From my Note-Book. By Alexander Mackie.
The Agriculture Competition.
Sensitometry and Orthochromatism.
What's What.
Forthcoming Exhibitions and Competitions.
Trade. Correspondence.

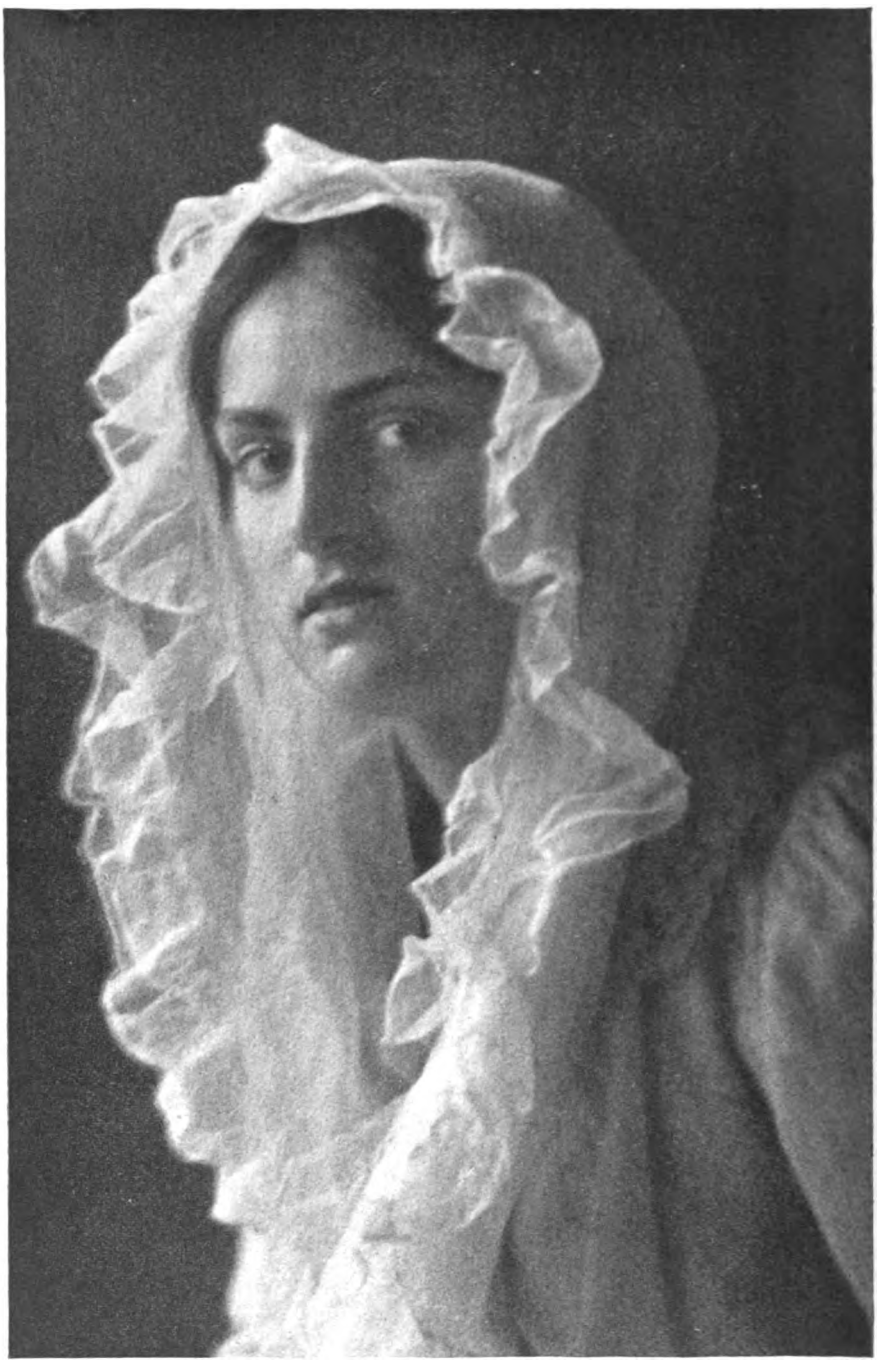
The Process Photogram

contains the whole of *The Photogram plus* the following articles and notes relating to photo-mechanical processes:—

The Process-Monger.
The Care of Screens.
Mirror Silvering: A Method of Securing a Thick and Dry Deposit. By Harold Hood.
Practical Notes. By J. H. Moger.
Rotary Intaglio Printing.
"Gisaldruck."
Continental Progress.
Collodion Dry Plates: How to Make Them.
Current Topics.
Correspondence.

Digitized by Google

Digitized by Google



"LESBIA." BY FREDK. H. EVANS.

"Lesbia hath a beaming eye,
But no one knows for whom it beameth;
Right and left its arrows fly,
But what they aim at, no one dreameth."

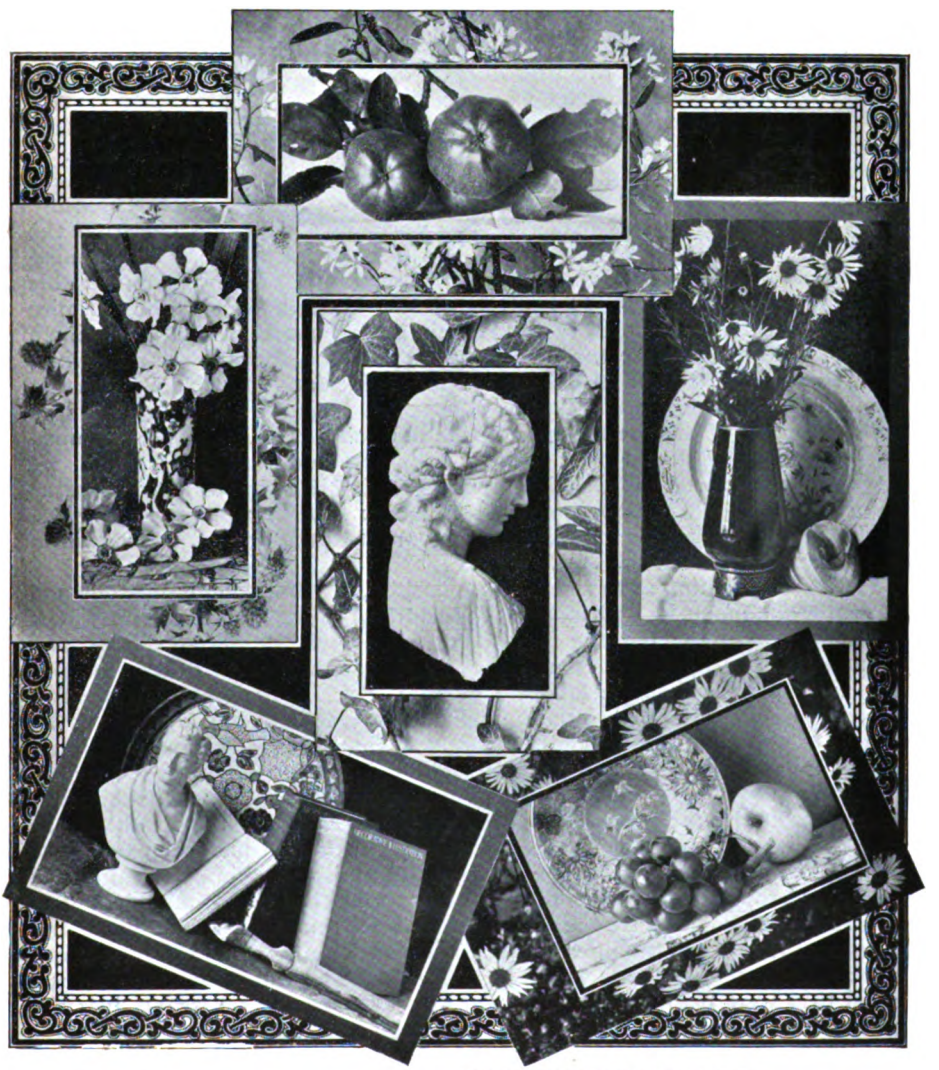
MOUNTING THE EXHIBITION PRINT.

Article and mounting scheme of the above supplement are given on another page.

Digitized by Google

THE PHOTOGRAM

VOL. XI. SEPTEMBER, 1904. No. 129.



THE PICTURE POST CARD.

SOME SUGGESTIONS FOR ITS PHOTOGRAPHIC EMBELLISHMENT. *By E. W. Jackson.*

Digitized by Google

MOUNTING THE EXHIBITION PRINT

BY FREDK H. EVANS.

This series of progressive lessons in the modern border-mounting of prints, which commenced in the January number of The Photogram, *is continued each month throughout the year. The instruction is given in reference to an actual example to be mounted by the reader on the paper, or papers, of the covers.*

This month's exercise.—Print :—"Lesbia." Mounting Papers :—Lindenmeyr's "Stone" and "Granite."

THIS month's exercise is from a study of my own; it was exhibited at the Salon under the title of "Lesbia," and I appended the stanza from the old Irish song, as a description.

There is an air of virginal innocence about this portrait study that seemed to call for tender greys and delicate whites in the mounting. I therefore chose this simple scheme of two colors only, the Stone—a very delicate pale grey—and the white edging (of a palest possible Silurian), known as Granite by its makers. The portrait, after being cut from the magazine page, is first to be stuck on to a piece of the Stone paper forming the covers of this month's issue, and trimmed to $\frac{1}{8}$th inch all round; this has then to be stuck on to a piece of the Granite paper; the Granite paper is now to be trimmed to quite a thin line, about the 32nd of an inch, but not quite so thin as the black line in previous examples, as the white in so thin a line as that would not be felt sufficiently, the black asserting itself more, however thin its line may be. This has now to be stuck on to a second piece of the Stone paper of this month's covers, and that trimmed to margins of $\frac{7}{16}$ths at top, $\frac{1}{2}$ inch at sides, and $\frac{3}{4}$ at foot. Again we have to place this on the Granite paper, and trim it away to a thin line as before. The whole has now to be placed on its final support, a third piece of the Stone paper, showing margins to agree with the proportions shown in the reproduction.

If a simplification of this scheme be desired, the first edging of Stone and its white line might be omitted, and the width of the second Stone margin be kept as above given; but the final effect will not be nearly so dainty, and though we have again used as many as five papers, the effect of the whole is not that of a needlessly elaborate mount; it really amounts to only two narrow lines of white drawn on the delicate grey, but the effect given by the adding of paper on paper is quite different to that we should have had if we had simply ruled the lines in Chinese white on the grey paper.

This study raises a question worth a word or two here. It would at first seem that as the background of the picture is dark, a dark mount should be chosen to set off and avoid undue contrast. But if this had been done the dark background of the picture would have been degraded in color value and effect, and the delicate whites of the drapery and the softly-lit modelling of the features would have been heightened in tone and made hard and unsympathetic. On the other hand, too light a mount would not have done, as the soft pure high-lights would have been lowered and so have lost all the effect they were planned for. The soft grey used, the Stone, seems just the neutral tint required; though if it were used alone, the effect would have been but dull and uninteresting; the light lines were therefore added to answer to and emphasise the high-lights of the picture, and throw up the value of the grey, which enriches the dark picture background and keeps it in its full value.

Digitized by Google

MOUNTING THE EXHIBITION PRINT.

"LESBIA."—Scheme for mounting the Supplement, presented with this number, as directed by Mr. Evans on the opposite page.

Digitized by Google

THE PORTRAIT AND THE STUDIO.

VII.—HOLLINGER.

Digitized by Google

THE PORTRAIT AND THE STUDIO

VII.—W. M. HOLLINGER.

In previous issues:—The work of Fredk. Hollyer, B. J. Falk, Harold Baker, C. H. Braithwaite, W. Scott, C. H. Evans, H. M'Michael, Pirie Macdonald, Mrs. Käsebier, Martin Jacolette. To follow:—H. Walter Barnett, Elliot & Fry, Langfier, Ltd., and others.

Copyright by The Photogram, Ltd., England.
Copyrighted 1904 by Tennant & Ward, New York.

MR. HOLLINGER is a successful innovator. Beginning business as a tintype worker "in the West," he soon longed for a more important field, and came to New York at a time when it was "overcrowded with photographers." He had the almost unprecedented assurance to begin work in a room that was not a studio, to use technical methods that were entirely new in professional photography, and to introduce a business system that was revolutionary. He succeeded.

He was probably the first professional to quote all prices for single prints only, and to refuse to have anything to do with a rate per dozen. He was probably the first to refuse to accept money until the sitter was satisfied. If anyone wishes to sit to him he will make an appointment, will expose a few plates, and will send home one print from each negative which he approves. From the others he will not show proofs. The sitters may keep all, or any, of the prints, price $3.50 (fourteen shillings and sixpence) each; or may return them all, in which case the transaction is at an end, and no re-sitting is given. If a sitter wants more than one print of any negative, the second and following copies are $2.50 (half a guinea) each. The sitter cannot choose the size or the mounting of the print, in advance (though Mr. Hollinger will oblige to a certain extent), for these are held to be matters for the artist only. Thus, though the exposure is made on 7 × 5 or 10 × 8 plate, the print may be full size or may be only a strip of three or four inches by one or two. At times when children are taken together for a group, the most successful picture may be of one child only, cut from a group in which the others moved, or posed awkwardly. This insistence upon his own way, backed by a power of selection that commands respect, has been one great secret of Mr. Hollinger's success in dealing with a cultured and very critical set of people. Though he was ridiculed by photographers when he first showed the front of a girl's head, trimming away all that was behind the ears, it was a piece of selection which time has justified.

Children are great favorites with Mr. Hollinger, who has a hundred and one tricks and methods for their management. These constantly change. At the time of my last call, the most successful entertainment for young boys was "the Indian Magic Fire Stones," a handful of chipped flints picked up from one of the heaps left by the knappers who made arrow-heads. A demonstration of how these could strike fire from the back of a knife-blade, and the presentation of one of the flints, secured the interest and co-operation of the most difficult boy. For nervous children with whom nothing satisfactory could be done, there was the trick of pretending that the sitting was over, talking with the mother or nurse, and photographing the child, quite unaware, while absorbed in its own pursuits. This is rendered possible by Mr. Hollinger's refusal to stick to any exact size or arrangement, and some of his very best studies of children have been made in this way.

Digitized by Google

The studio is a large, high, practically square room, with a big side-light facing almost due east, and flooded with a sunlight in the morning time. The blinds are practically unused; and after being arranged in the first two or three days of October, when the season begins, they remain untouched, save for dusting, for nine months. The sitter's chair is placed on a small movable platform, and drawn from place to place to secure varied lighting; and even direct sunlight on the face is sometimes used—with striking success.

Mr. Hollinger's prints are all in platinum or carbon—the former preferred. He is probably unequalled, and certainly unsurpassed, for richness of detail and range of tone, which he carries into the strongly-contrasted high-lights and deep shadows of many of his pictures. Yet he never develops a plate personally, except at the beginning of the season or when doing a bit of hobby work; and the same brand of plates are always used (not because they are the best, since he does not know whether they are best or not, but because they are good enough), and always give the required results. As a recreation Mr. Hollinger has done a good deal of photography of flowers; and the extent to which the methods used for his human sitters have proved successful with the "still life" objects, is absolutely startling.

Mr. Hollinger has done a good work for professional photography by showing that there may be striking individuality and originality without eccentricity, and that the individual print system can be made a commercial success. His technical lessons are:—1. Leave your blinds and curtains alone, devoting yourself entirely to sitter and camera; 2, make a correct exposure on a known plate, then any good youth can develop it; and 3, light, expose, and develop properly, and you will need very little retouching. No. 1 saves operator's time; No. 2 saves principal's time; No. 3 saves retoucher's time; and by means of these three savings, Mr. Hollinger is able to do all the operating and all the retouching, to decide the trimming and mounting, and to inspect every print, in a large business.

Farmer's Reducer.—In the *Revue Suisse* Dr. Stürenberg lays stress on the need of working Farmer's reducer in a more exact way than the usual one of adding potass ferricyanide to a solution of hypo (strength immaterial) until the liquid is lemon yellow. Recognising that the half-tones are attacked as the proportion of ferricyanide is increased, and that the action of the reducer is even when the hypo is present in large ratio, he recommends the compounding of the reducer by measurement, not by the eye, taking 5 per cent. stock solution of:—(A) Hypo, (B) Hypo *plus* one fifth its weight of carbonate of soda, and (C) Potass ferricyanide. The B solution is a means of moderating the bath, the reducer with this addition acting with great evenness over all the tones instead of attacking the half-tones and high-lights unduly. Moreover, the carbonate prevents yellow stains.

Strange to say, an acid reducer acts in the same way, only more slowly. It is made by adding ½ oz. of acetic acid to 5 oz. of the reducer. The acid reducer must be mixed at the time of use, but there is no apparent precipitation of sulphur within a short time.

Formulæ.

For even reduction of negatives and bromide prints: B, 5 oz.; C, 2 drams.

For brightening dense but flat negatives: B, 5 oz.; C, ¼ to ½ oz. according to the amount of "pluck" required.

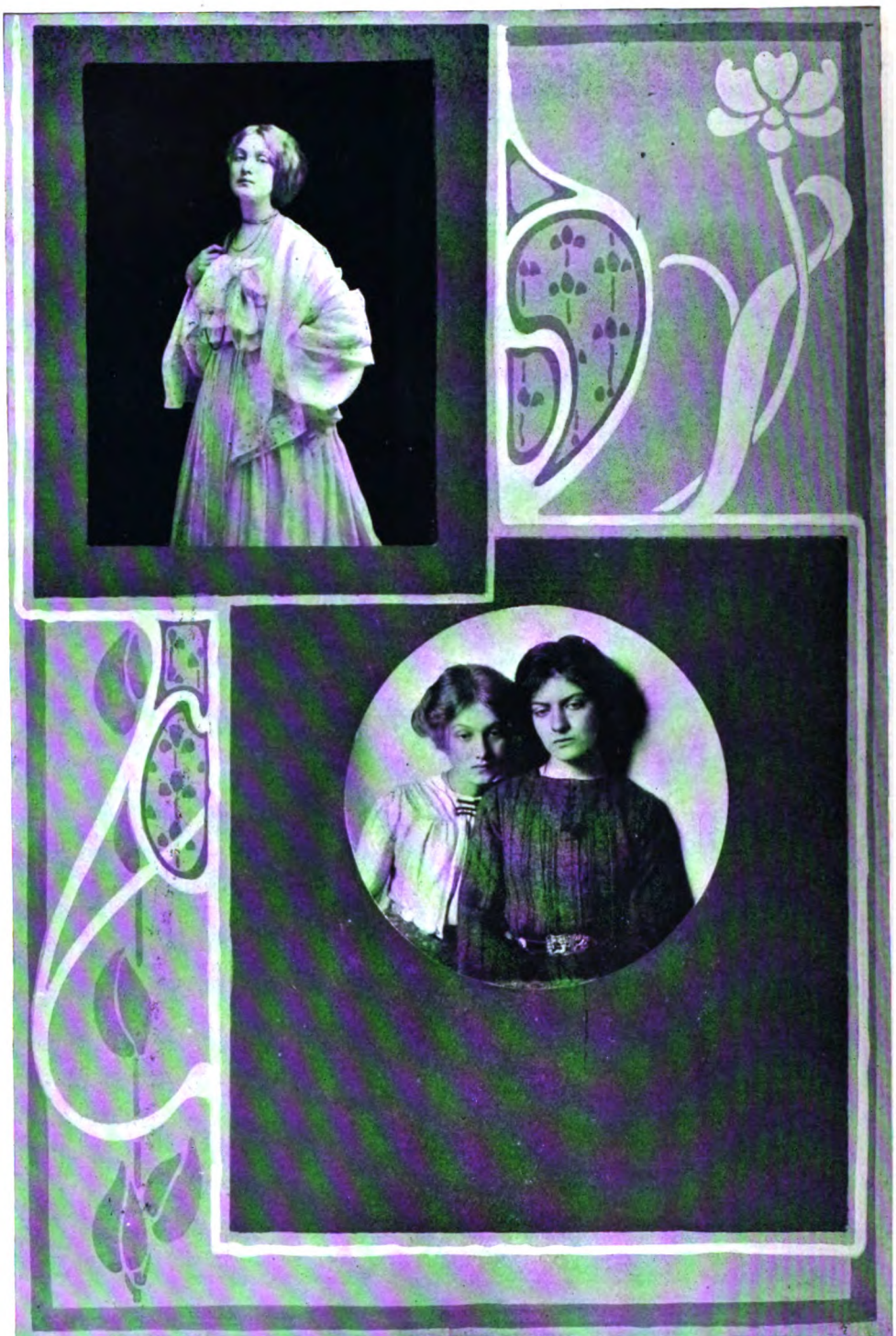
Reducing *plus* after-intensification: Commence with A, 5 oz.; C, ½ oz., adding a few drops more of C if required. In this way every trace of fog can be removed from a negative, and it is then in the right state for intensification. If, for example, we wish to convert a dense negative which gives flat prints into one printing more quickly and vigorously, we use:—B, 5 oz.; C, 2 drams, until it becoms perfectly clear in the shadows.

If it is then too thin, it is intensified as follows:—After well washing, bleach in solution C, and after a further short washing apply a 1 per cent. uranium chloride solution until the negative reaches the desired strength. Then wash and dry.

The proportions given above for negatives apply equally to bromide prints, but for them the solutions should be diluted with twice or thrice their volumes of water.

Digitized by Google

Digitized by Google

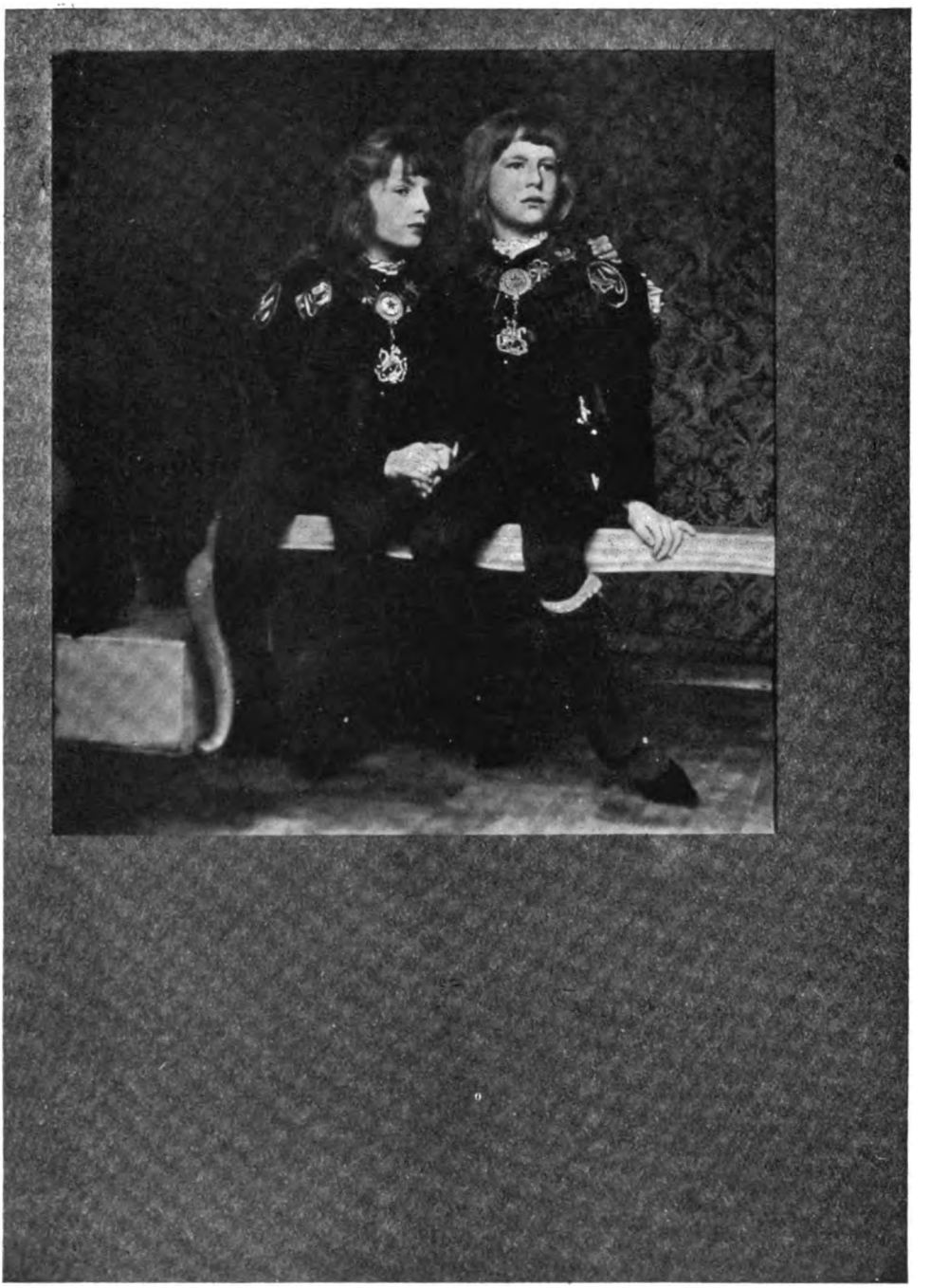


LADY DISDAIN. THE SISTERS.

By Miss Marian Silverston

(*See "Home Portraiture" Article.*)

Digitized by Google



THE LITTLE PRINCES.
By Whitworth Wallis.

(*See "Home Portraiture" Article.*)

Digitized by Google

Digitized by Google

"At Home" Portraiture.

SOME NOTES, TECHNICAL AND CRITICAL, ON PORTRAITURE IN ORDINARY SURROUNDINGS. BY MISS MARIAN SILVERSTON. ILLUSTRATED BY THE AUTHOR AND WHITWORTH WALLIS.

THE first example—"Lady Disdain"—is perhaps as ambitious as any of those reproduced. It aims personifying disdain standing aloof and isolated. The expression is half contemptuous, half indifferent, as shown by the pose of the thrown-back head, the scornful droop of the corners of the mouth, the eyes partly closed. The left hand firmly planted on the hip, and the right, thin and wiry, intensify the note of self-sufficiency and superiority, which is repeated in the strength of the square chin.

An effective method of treating such a subject is to throw the light figure into strong relief against a dense black background. The strongest light falls upon the figure from a small skylight, slightly to the right. There is a low window on the same side, and to the left of the picture a big white reflector. The negative is fully exposed, thin, but full of detail.

"The Sisters" is an at home indoor portrait study, taken during the winter on an Imperial "Special Rapid" plate, with stop *f*/8, and an exposure of 3 secs. The sitters were placed against a cream-colored wall, facing a very large south window at a distance of some 9 feet. The unpleasant glitter in the eyes which would have occurred had the sitters looked straight in front of them, was avoided by the downward direction of their glance, and the position adopted brought the two heads as nearly as possible into one plane—an important point.

The resolute firmness of the elder sister forms a striking contrast to the timid dependency of the younger, and the picture tells its own story of a strong spirit always ready to shield and protect one weaker than herself. The aim was to secure individuality of expression, and as far as possible a vivid realisation of character.

It is almost entirely to the nature of the lighting employed that we are indebted for the strength of the modelling and range and gradation of tone. How few of us realise what a very important part is played by the distribution of light and shade in our enjoyment of a picture. Chiaroscuro skilfully adjusted, adds dignity and subtlety to any subject, and conveys a sense of refinement.

"The Little Princes" (supplement) is the work of Mr. Whitworth Wallis of Birmingham, and represents an imaginary episode in the life of the unfortunate brothers in the Tower. It is no light task to carry out successfully and consistently a subject such as this, and the photographer is much to be congratulated on the result he has secured. The picture was taken in a vestibule half out of doors with a full front light upon the figures.

Digitized by Google

Note the introduction of the stone step, suggestive of the steps of the Tower. The date of the murder of the luckless brothers, Edward V. and Richard, Duke of York, was 1483, and what at first sight might appear here to be an incongruous background has been used with advised intent, since it is a fine piece of tapestry hanging, belonging either to the end of the fifteenth or beginning of the sixteenth century.

The slightly taller of the two figures represents the elder brother, Edward V., the bolder and more fearless nature—

"And if I live until I be a man,
I'll win our ancient right to France again,
Or die a soldier, as I live a King."

Clinging to him, as if for support, is the little, nervous, highly-strung Richard, Duke of York—

"I shall not sleep in quiet at the Tower."

Both in pose of head and body there is an attempt to realise the diverse characters of these ill-fated children.

That there is a noise outside which has disturbed them is indicated by the attitude of sudden fear or surprise. See the pose of the heads. Edward on the *qui vive* ready to protect the younger at all cost, and obviously on the defensive, the left hand resting on the seat, and the left foot projected ready for immediate rise or spring.

The tapestry, manifestly of historic interest, supplies a distinct note of local color, but the French Renaissance bench is unfortunate. It would have been of advantage had there been more detail in the arms and bodies, the loss of which is due to the fact of the negative being rather thin and under-exposed.

"BUSY BEE."

That "Busy Bee" has turned out rather more successful than the ordinary outdoor portrait is probably due to the atmospheric conditions under which the exposure was made one hazy autumn morning.

The child has been gathering fruit and has just thrown herself into a chair to rest, but the pose leaves much to be desired, for the position of the arms is very awkward. This was recognised at the time of exposure, but the attitude was allowed to remain unaltered, as it was exceedingly characteristic of the little sitter. The prominence of the basket of pears constitutes another grave fault. It is evident that only the leading feature of a picture should be so placed as to directly attract the eye. What is the leading feature here? Surely the face, serious and solemn in its resolute strength.

(Some other outdoor portraits and notes thereon will appear next month.)

Digitized by Google

ADVANCED HAND-CAMERA WORK.

by Walter Kilbey.

The fourth of a series of articles (May, June and August) on refinements of the more difficult work with a hand camera. This month, horse racing and jumping. In October, divers.

WHAT applies to human competitors largely applies, of course, to events in which horses are the competitors, and the points to be considered are practically the same in both cases, except that owing to the difference in size it will be necessary to get further away.

Horse shows are the most likely places at which good results in such subjects as the above are to be obtained. The contests are generally divided into trotting and jumping competitions. The former are again sub-divided into classes in which "style" is considered, or "pace and action," in which the element of speed is the predominant factor. For the former, a very rapid exposure will hardly be necessary (say up to about $\frac{1}{800}$ sec.). The chief points to be taken into consideration are the necessity of obtaining the horse and vehicle in a good position on the plate. Both in this case and that in which the speed of the animal is being demonstrated, the endeavor should be to illustrate movement. If a part of the course can be chosen where there is a certain amount of rising dust, this will often give a good idea of motion, but where this is not possible a slight blurring of the wheels of the "sulky" or other vehicle to which the horse is attached, will be permissible. The movement of the horse's legs in speed contests will probably necessitate the shutter being driven as fast as possible (say $\frac{1}{1000}$ sec.) unless we are content to get well away, though twenty to twenty-five feet will, generally speaking, be a good distance. Whilst speaking of the choice of position, a word might be said as to the foreground, which is so often the weakest part of the picture. Often there will be nothing but an uninteresting expanse of turf, but this can sometimes be broken up by a patch of shadow, say of a tree, pavilion, or some similar object, to the great improvement of the whole. Such subjects as "A Record Breaker" (see page 248) the reader is advised to eschew until he has had some considerable experience in very rapid work; * for this reason, that until the brain and hand have been trained to act in unison, the result conceived by the brain will not be secured by the hand, as there will be a perceptible interval during which the conditions will have altered owing to the rapid movement of the object. A kind of temporary paralysis appears to be set up, and the "trigger" finger, as it were, refuses to obey the impulse of the mind. The reader who has had some experience of shooting will know exactly what this means, and will agree with me that it can be overcome by steady practice.

In dull weather, or in the case of events taking place late in the afternoon, a sharp look-out should be kept for horses of a light color, as they are more likely to give a successful result than those of a black or red shade.

If you have never dabbled with athletics, you are likely to find yourself

* The original quarter-plate is completely filled up by the subject, which is, generally speaking, an undesirable result to aim at; but considering that the animal is travelling at about thirty miles an hour, and at right angles to the lens, it will illustrate what can be done after there has been practice in precision.

Digitized by Google

very much in the way of competitors, and perhaps, if at a cycle meeting, bring a competitor to the ground, which would cause a terrible smash, with the probability of serious injury to the riders involved. I mention this only the more to impress upon you the great necessity of keeping carefully out of everyone's way.

Teams and tandems make interesting pictures, and the foregoing remarks apply equally to them, except that we must increase the distance between them and the camera, retiring to, say, 40 to 50 feet.

The jumping competitions will, however, doubtlessly prove the most attractive. The obstacles are designed to exhibit any defects in the animals when clearing them, and generally consist of a swinging gate (over which

"A RECORD BREAKER." 1-900th sec. at *f*/6 with Thornton-Pickard focal-plane shutter.

any ties are usually jumped off, as it appears to prove the most formidable), or a wall, the upper portion of which consists of loose blocks of wood, imitating bricks. If either obstacle is touched by the horse, it is displaced, and the identical moment when the exposure should be made, if a realistic picture is sought, is when the gate or bricks are falling.

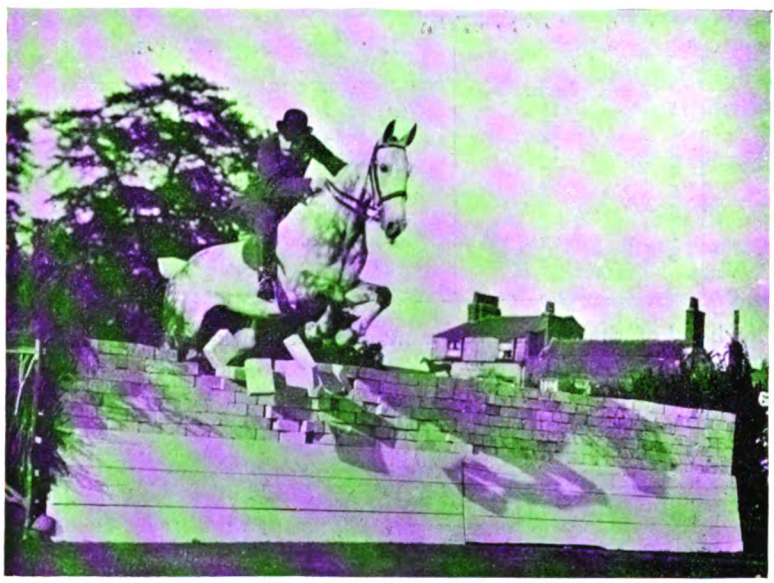
The water-jump, too, should afford many striking opportunities, especially where the rider or the horse are not *au fait* with this particular jump. One should be equally ready for the failures as for those who clear this obstacle successfully, for a bad jump may make a good picture, and the effect of the unfortunate equestrian taking a header into, or emerging from, his involuntary "tub," is not infrequently very funny. If you wish to be involved in the resulting muddle, a tripod and focussing cloth are the most likely means of bringing this about, and should you be so imprudent as to attempt to use them, you need not be surprised if your action is resented, and your absence demanded in what can best be described as "horsey" language. As before advised, leave the tripod at home. I would add that admission to the show ground is generally to be obtained if a courteous request is addressed to the secretary in the manner alluded to under Athletic Sports.

Race meetings such as the Derby and other classical events are not very full of promise. On the contrary, owing to the enormous crowds and the width of the course, the results will most probably be disappointing. Some

Digitized by Google

of the country meetings may perhaps be worth a visit, and are likely to prove more fruitful. The shutter will require to be driven as fast as possible for most subjects as are likely to be met with.

One of the most difficult things for one unaccustomed to high-speed shutter work is how fast he *must*, or how slow he *may*, work the shutter to get a sharp picture. Two speeds have to be taken into consideration, viz., angular velocity and actual velocity. The shutter will need to be driven three times as fast for a subject taken broadside on as would be allowed for the same subject if taken "end-on"—that is, when coming towards, or receding from, the camera. The following formula is laid down in the text



"OVER THE WALL." 1-700th sec. at *f*/6·8. Taken on an "Imperial Flashlight" plate at 6.40 p.m.

books to assist the operator to find the correct exposure. Exposure in fractions of a second:—Distance of object from camera in inches, yards per hour × focus of lens in inches. For example: supposing the object is 50 feet from the camera and the focus of the lens is 6 inches while the movement of the object is at the rate of twelve miles an hour, we get—

$$\textit{Exposure}— \quad \frac{50 \text{ (feet)} \times 12 \text{ (reduce to inches)}}{12 \text{ (mins.)} \times 1760 \text{ (yards in a mile)} \times 6 \text{ (inches focus)}}$$

$$= \frac{600}{126{,}720} = \frac{1}{211} \text{ of a second (about).}$$

This is no doubt all very well in its way, but it always appears to me that by the time one has worked out the answer, the subject would be miles away. I have therefore included the following table, which I would suggest be cut out and placed in some convenient place where it could be referred to immediately at a moment's notice.

	Right angles.	Towards camera.
Cycle racing, horses galloping	$\frac{1}{1200}$	$\frac{1}{400}$
Athletics, men running, etc.	$\frac{1}{900}$	$\frac{1}{300}$
Fast trotting	$\frac{1}{900}$	$\frac{1}{300}$
Diving	$\frac{1}{300}$	$\frac{1}{225}$
Pony and trap trotting	$\frac{1}{600}$	$\frac{1}{200}$

Digitized by Google

The table is made out for a 6-in. lens at 25 feet, a 7-in. at 29 feet, 8-in. at 34 feet, etc. A rule is, if you halve the distance, you must divide the exposure by two, or if you double the distance, then double the length of the exposure. In conclusion, I think the following table, which is compiled for use with the Goerz-Anschutz shutter, will be found very useful. It gives, at a glance, approximately any fraction of a second that is likely to be required.

EXPOSURE TABLE.

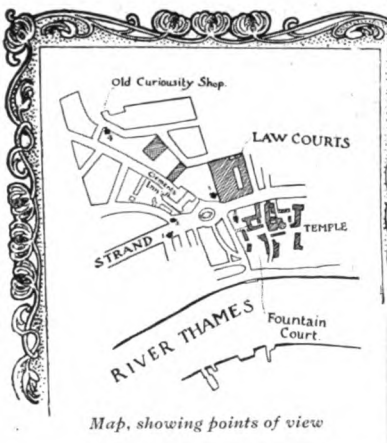
No.	Aperture of slit.	Spring tension.		
		1.	5.	10.
	Inch.			
1	1½	1/15	1/30	1/75
2	1¼	1/30	1/60	1/150
3	1	1/35	1/75	1/125
4	¾	1/50	1/100	1/150
5	½	1/75	1/150	1/225
6	¼	1/150	1/300	1/450
7	⅛	1/300	1/600	1/900
8	1/16	1/600	1/1200	1/1800

The blind of the shutter has a number of marks impressed upon it to facilitate the setting of the slit.

"PURE JOY." 1-150th sec. at *f*/5·6.

[An immense amount of information on the higher walks of technical high-speed photography is given in *Advanced Hand-Camera Work*, a book written by the author of the present articles, and issued by our own publishers.—EDS.]

Digitized by Google



Map, showing points of view

SIX-PLATE PROMENADES

A series of brief walks with a camera in London—continued from August issue.

V.—ROUND THE LAW COURTS.

By H. SPRINGALL.

START in the morning. The first plate, the Strand, with St. Clement's Church, had $\frac{1}{25}$ sec. at *f*/16. There is a quaint air about the print which one does not feel at this spot, and the church gives the photogram the appearance of that of some old Bavarian town. St. Clement's Clock is at 11, and both this and the next plate might have been better lighted by waiting until the sun was further round.

No. 1.—St. Clement Danes and the Law Courts.

No. 2.—The Law Courts.

Our third exposure is a typical lunch-hour scene in the courtyard of the Law Courts; the pigeons miss the late Mr. Justice Hawkins, whose custom it was to throw grain to them during the adjournment for luncheon.

A few steps further on lead us to the "Old Curiosity Shop," much visited, although there is no reason for associating it with Dickens.

We now go into the Temple, and devote our fifth plate to Lamb's Buildings. The

Digitized by Google

No. 3.—Lunch-hour in the Courtyard of the Law Courts.

corner is sheltered, and without the sun's aid, *f*/8 had to be used and the so-called $\frac{1}{25}$ given again. The quiet of this oasis, in the roar and rush of the great city, takes us back involuntarily to "Elia" and the "Old Benchers," and we stand and muse and wake up to wonder how this spot can have preserved its quiet restfulness, whilst all around has succumbed to the necessities of the capital of the world. An exposure on the fountain was made to complete our work in the gardens. The light was feeble, being filtered by the trees, and some account was taken of its color in giving 4 secs. at *f*/16. The time might have been shorter had the diaphragm been opened, but the moving water takes a more realistic appearance on a print with the longer exposure, "wooliness" being avoided.

No. 4.—"The Old Curiosity Shop."

No. 5.—Lamb's Buildings, Pump Court.

About this part of London there is a wealth of subject perhaps greater than in any other space of the same size; and although many of the courts and narrow streets need stand exposures for their successful treatment, there is great variety of work even for the hand camera.

No. 6.—The Fountain in the Temple.

Digitized by Google

On Hand Cameras.

Before deciding upon the most useful size of hand camera to adopt, there are so many points to be considered that it is worth while discussing some of them. It will be obvious from the foregoing notes that when near and distant objects are to be included, the shorter the focus of lens employed, the larger the stop aperture that is available; but a lens of short focus entails a plate of correspondingly small size, and one has to put up with small direct prints or to make enlargements from the negatives. Extremely small negatives made on very rapid plates rarely enlarge well unless the enlargement be of such size that a distant view is necessary. The image is apt to be so coarse that the result is palpably gritty, and the breaking up of the image, so far from helping pictorial effect, is of the kind that has the opposite tendency. On the other hand, a more rapidly acting lens allows a plate to be chosen which, if less sensitive, is distinctly finer in grain, and the enlargement difficulty can be overcome that way, with the reserve power of using plates of the highest sensitiveness when occasion may require. Anything like wide-angle work with a hand camera, as a practice, is not to be advocated, but the employment of a lens of less than the normal focus for the size of plate might very often be found extremely useful on account of the ability to employ it at a very large aperture. This means, of course, the sacrifice of the margin of the plate to reduce the angle of view included, but this is of little consequence. As a corollary, the greater depth of focus obtained means less necessity for accurate judgment of distance, and that is an advantage. As $3\frac{1}{2} \times 2\frac{1}{2}$ plates have now become recognised articles of commerce, there is no difficulty in obtaining them in any make. A hand camera to take that size should be quite a practical instrument for serious work.

Ocular Experiments with Pinholes.

There is much to be learnt from studying the aspect of Nature through a pinhole. The apparatus is easily procurable, and not costly. It consists of a piece of thin black or dark colored paper and a pin. Having made a puncture, place the paper as close as possible to the eye, so that the aperture is on the optical axis. In this position the optical system will resemble that of a single lens with a small stop, as used in photography. The first thing to be noticed is that whereas with the naked eye it is impossible to see objects situated in different planes directly at the same time, with the pinhole, planes widely separated will be all distinct. It will be found, too, that printed matter can be read with ease, placed as close to the pinhole as is consistent with obtaining enough light on the paper; and short-sighted persons will be able to distinguish letters

Digitized by Google

beyond their normal sight. With a pinhole, short, long and normal sighted persons all see alike. An interesting experiment is to take a lens of positive focus—an ordinary reading glass or a photographic lens answers equally well. It will be found that using the lens as a microscope the object has to be placed at something less than the solar focus, and then the lens magnifies. Using the lens as a telescope everything is blurred, but the interposition of a pinhole between the eye and the lens restores definition, and there is no sensible magnification. A corollary of this experiment is that provided a small enough stop be used, not necessarily to the extent of a pinhole, a lens may be placed at such a distance from the plane of the plate that nothing is in focus with a normal aperture and yet a reasonably sharp image may be obtained. This is quite practical. If one has, for instance, a 7-inch lens, and to include sufficient of the subject a 5-inch lens would be required, all that is necessary is to adjust the position of the lens and screen so as to include the amount of subject required, disregarding the confused image, to stop down sufficiently, and to give the requisite exposure. The rough and ready method of making a pinhole above prescribed serves for the ocular experiments detailed; but the scientific making of a pinhole for photographic work is a matter entailing considerable technical skill.

Architectural Exteriors.

It is often noticeable in a series of lantern slides of architectural subjects, that while the interior views are admirable in every way, the occasional exterior views fall far below the general average as specimens of photography. It seems difficult to understand this, as while interior photography is generally acknowledged to be a difficult branch, or, at any rate, to require special knowledge, exterior photography apparently presents no difficulties and calls for no photographic treatment out of the common. As a matter of fact, when the aim is to present all the detail visible in the subject, from one end of the scale to the other, the result can only be obtained from the very much desired perfect technical negative, and the perfect technical negative is not such an easy thing to make as some very superior people try to convince themselves. Beyond the photographic skill required, there is as much necessity for special study in the treatment of the subject as there is in the photography of interiors. It is important to give in the print a correct impression, if not of the exact color, at least of the correct tone of the stone, and in this respect many of them fail. It would not be a difficult photographic feat to make photograms of a block of black marble and of a block of white marble apparently alike, at any rate, so that neither represented its original, and if this can be done by design, similar results may occur without intention. The matter entirely lies in the correct or incorrect rendering of tone colors. Under every change of light, objects have a different appearance, but under no aspect, except, perhaps, the gilding rays of the rising or setting sun, is the eye deceived as to the local color of a building, because Nature, unlike the photographer, never gives us shadows which are incompatible with the lights.

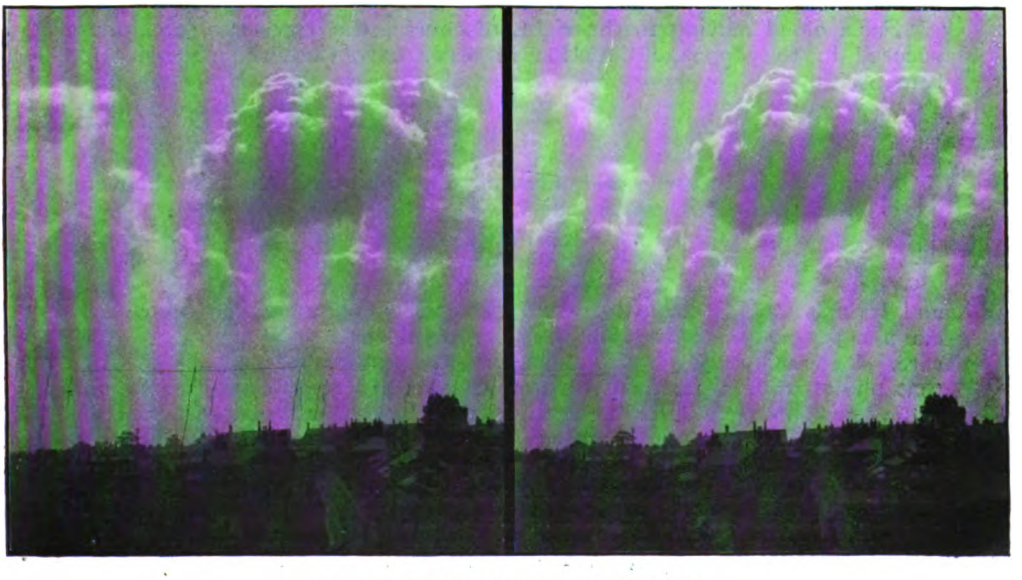
Examples of Pictorial Photography, by Dr. C. F. Grindrod (price 3s. 6d.).—Excellently reproduced, and published by The Photochrome Co., Ltd.; with an introduction by H. Snowden Ward. Examples of the later work of Dr. Grindrod, several of these will be new to even those who saw his one-man show in the rooms of the Royal Photographic Society a year ago. Others are old friends, and all of them are good specimens. They are selected from the more "popular" subjects, in landscape and in figure studies, and being in size and style suitable for framing, many of them will secure permanent places on the walls of the home, after serving their turn as object-lessons for the earnest amateur.

Digitized by Google

THE STEREOSCOPIC PHOTOGRAPHY OF CLOUDS.

By Charles E. Benham.

As is well known, the visual impression of solidity is due to the dual point of view of the eyes. Slightly different aspects of objects are projected on the several retinas, and the conjoint impression upon the mind gives, by association of ideas, a sense of the solidity of objects. The stereoscopic camera presenting appropriately similar renderings of objects for the respective eyes, the combined result in the stereoscope necessarily produces the same mental impression as in nature. But in looking at distant objects the dual point of view of the two eyes is, of course, practically negligible, and therefore, to render these in more appreciable relief, the lenses of the stereo camera are often separated by a wide distance, with the result that the effect is attained, though the image in the stereoscope looks like a "model" of the original—a diminished solid nearer the observer. In the case of clouds, most people can have but a very indistinct impression of their true form, because their distance from the observer renders binocular vision practically inoperative in providing any appreciable difference of image to convey the impression of the several planes constituting the masses. Two photograms taken simultaneously at, say, a hundred yards' interval, would no doubt give relief when combined in the stereoscope. The result would be a "model" of a cloud, showing the form perfectly, but not, perhaps, giving a proper impression of magnitude. To photograph clouds in this way would obviously be attended with difficulties, but a much simpler way of obtaining cloud stereograms is worth attention, as by this plan a most fascinating field of work is opened out, and one not without scientific interest and value, as showing the true form of cloud masses of different kinds. The method is to let the cloud move instead of moving the point of sight. The effect is, of course, the same, provided the cloud retains its shape, and it will be found that as a rule this is sufficiently the case for practical purposes. Two exposures must be made, with a short interval of time between them, to allow the cloud to present a sufficiently different aspect to give stereoscopic relief. The exact duration of this interval is not of great importance. If a



Stereogram of clouds—two exposures with pinhole.

Digitized by Google

good wind is blowing, a few seconds suffice. If the cloud is moving more slowly, a quarter to half a minute may be allowed. I have found a pinhole stereoscopic camera the most convenient and satisfactory. Open one pinhole for an instant's exposure, and then, after waiting the appropriate interval, expose the other half for an equal instant. Of course, the line of sight must be at right angles to the line of movement of the cloud. If the movement is from left to right, and the second exposure is made for the *right hand* picture, the negative will not require the usual stereoscopic transposition, though, if terrestrial objects are included, it is better to reverse the exposures and transpose the prints in the usual way. Objects on the horizon, if they enter the picture, will appear more distant than the cloud, as, of course, they have not shared in the changed point of view. They do not, however, spoil the picture. Nearer objects, actually cutting the cloud, should not be introduced, as they will necessarily be thrown back behind the cloud in the stereoscope. For the pinhole camera (No. 10 needle) the most rapid plates may be used, but, of course, these would be over-exposed in cloud photography with a lens, except in the evening.

The angular distance requisite to make the representation in the stereoscope equivalent to a model of the object at any given distance is easily measurable. Suppose we wish to represent it as at three feet from the eye, place an upright rod at that distance, and closing first one eye and then the other, note the distance apart of the two images as projected on the sky. We have only to allow the cloud to move a similar distance, and the equivalent stereoscopic effect will be produced.

If a terrestrial object, not very distant, comes into the picture, it may be thrown into the foreground by taking the second picture from a fresh point a few feet to right or left as the case may be; and if the direction of movement before taking the second picture is *opposite* to the direction in which the cloud moves, no transposition of the prints will be necessary, but sky and landscape will be rendered in miniature in approximately true planes. Thus for a cloud moving to the *left*, the order of the procedure is:—(1) Uncover *right* pinhole or lens; (2) move camera to *right* a few feet if landscape intervenes; (3) uncover *left* pinhole; (4) print direct from negative and do not transpose prints.

For a cloud moving to the right, of course, the exposures, etc., must succeed in the opposite direction in order to obviate the necessity for transposition.

FOR CHARITY'S SAKE.

By H. S. W.

Poor Tom Hood, who had only too bitter personal reason for knowing the truth of his words, sang—

> "Alas! for the rarity
> Of Christian charity
> Under the sun,"

and I think that probably in respect of charity, photographers may fairly claim to be good Christians, for their organised charity (at any rate) is very rare. I should be ungrateful indeed if I did not realise and acknowledge that photographers personally are at least as generous, open-hearted, and willing to help the poorer brethren as any class of men with whom I am acquainted. Yet photographers have no charitable association. Photo-engravers, when they raise charitable moneys, must hand them to a printers' fund, and a man in the photographic or photo-mechanical craft who falls on evil times has no place of relief save the parish.

If photographers hug to themselves the idea that there are no operators, retouchers, printers and other assistants in distressed condition, they are

Digitized by Google

grossly deceiving themselves, for it is a fact that not only all classes of assistants, but even photographers who have been in business for themselves and who have had in their day a fair measure of success, have come to want. It is true that some of these have fallen through their own thriftlessness or gross incompetence—there are ne'er-do-weels in every trade. It is also true that some of them may fairly claim that their present plight is due to no fault of their own.

The attitude of photographers to their benevolent associations has been very curious. The earliest charitable fund which was started by the craft was on the lines of a benefit society by which regular and relatively large subscriptions were demanded, and to which members only might apply for relief in time of sickness or distress. It gradually dawned upon those most interested that the photographers willing to subscribe to such a fund were very few in number; and further, that those who did so subscribe were exactly the kind of photographers least likely to ever make claim upon the funds. (In after years, however, more than one of these original thrifty members came down in the world, received help which he greatly valued from the "Benevolent," and fully reinstated himself in a successful position.) After some years the attempt to run a benefit society was felt to be hopeless, and after various schemes had been considered, it was decided to convert the concern into a benevolent fund, which all photographers were asked to support, and on which all photographers, their wives and children, should have a general claim if they fell into poverty.

At the time of the conversion the accumulated funds, which eventually amounted to some £300, were set aside as a nucleus for a pension fund, and this proved a most disastrous decision, for the accumulated fund, always standing in the books, too small to be used for pension purposes, yet very large in comparison with the funds actually received and distributed for the general purposes of the "Benevolent," proved a difficulty in the way of people asked to subscribe. For years the "Benevolent" was carried on by a very small but very hard-working committee.

Eventually the objection to subscribing further funds became so great that it was resolved to take all possible steps to secure the conversion of the pension fund to the general purposes of the association. So intricate were the difficulties under the Friendly Societies' Act that in spite of having hard-working and self-denying honorary solicitors, quite two years were consumed in the freeing of this fund; but not a great while elapsed before the whole of it had been spent, and spent very judiciously according to the best belief of the committee, when once the money was released.

Eventually the whole funds were exhausted, and the response to the last few appeals for subscriptions had been so exceedingly small that the committee was finally disheartened and practically ceased its efforts. Only a few months ago I made a personal appeal on behalf of one of the pensioners of the "Benevolent," whose poverty and sufferings were greatly increased by the stopping of the little weekly dole. I had ample proof that there are still generous hearts and open purses amongst photographers. The response was far greater than I had expected, and provided a sum sufficient to keep the poor old bedridden ex-professional for whom the appeal was made free from the worst pinch of poverty for some years. This fact prompts me to bring the whole subject of photographic charity before my readers.

May I suggest that the Royal Photographic Society or the Professional Photographers' Association, or, still better, both, might move in this matter? I am well aware of the legal difficulties in the way of the R.P.S. undertaking benevolent work, but I think there is nothing to prevent that society joining with another or with others in calling a meeting to consider the question, or in establishing a joint committee for the administration of a fund.

Digitized by Google

MATERIALS required:—retouching knife, sable brushes, Nos. 1 and 3, one or two stumps, cotton-wool, pumice powder, H.H. pencil, Conté "sauce,"* soft "velvet" rubber, Chinese white, and blue black.

Portraits.—Print should be on rough surface paper if over whole-plate or 10 × 8 in. size.

First rub over print with a tuft of cotton-wool smothered with pumice powder, and wipe carefully off with another piece of wool, or a soft duster.

Secondly (if it is a vignette), apply some of the Conté sauce spread on the first piece of cotton-wool over the part to which you wish to give the cloud-like appearance, and graduate as desired. If you happen to make it appear smudgy, clean off with pumice and try again.

Then with a stump and some "sauce" work in drapery detail, deeper shadows, etc., bearing in mind to put the work on as heavily as will be needed, for it is more difficult to increase the depth by a subsequent application. If the face and high-lights are lacking in modelling, it is best to slightly tint them all over with the "sauce," applied with cotton-wool or a stump; shadows therein may be increased if necessary with the latter in the same manner.

You may now attempt the "cleaning up" of the picture, especially the flesh, background, etc., using either the H. pencil or a No. 1 sable brush, *very lightly* charged with blue black, or a mixture of Indian ink and Payne's grey or indigo. "Process black" (Winsor & Newton) is also capital for the purpose. The method of cleaning is precisely similar to retouching a negative. The eyes, lips, brows, etc., can be modelled in a like manner, and sharp shadow and dark detail in the drapery and elsewhere put in with a No. 1 or No. 3 brush as necessary.

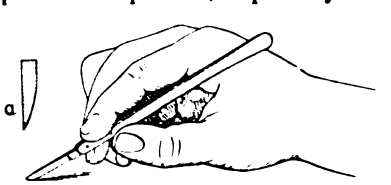


FIG. 1.—Section of knife and method of holding.

We next come to finishing the clouding of the background, and the strengthening of the tinted high-lights.

Soften off the vignette with pumice, and then with the "velvet" india-rubber make a few cloud breaks, taking care not to overdo it. Blow or gently mop off with wool any remaining pumice, and again using the rubber, take the tint off the highest lights in the flesh, etc., in a most delicate manner—just where the light should be most intense—and soften away with pumiced wool if necessary. If even now the highest points of light remain greyish, they can be lightened by means of the knife. Lace, linen, etc., may be brought out either with the knife or with a brush and Chinese white.

* A finely-prepared black chalk, usually sold in 3-in. rolls covered with tinfoil, or 5-in. glass tubes. It is obtainable of most artist material dealers. Black Conté crayon (the softest variety) may be used as a substitute; or the *soft* black pastel of the better-class makes will do equally well.

Digitized by Google

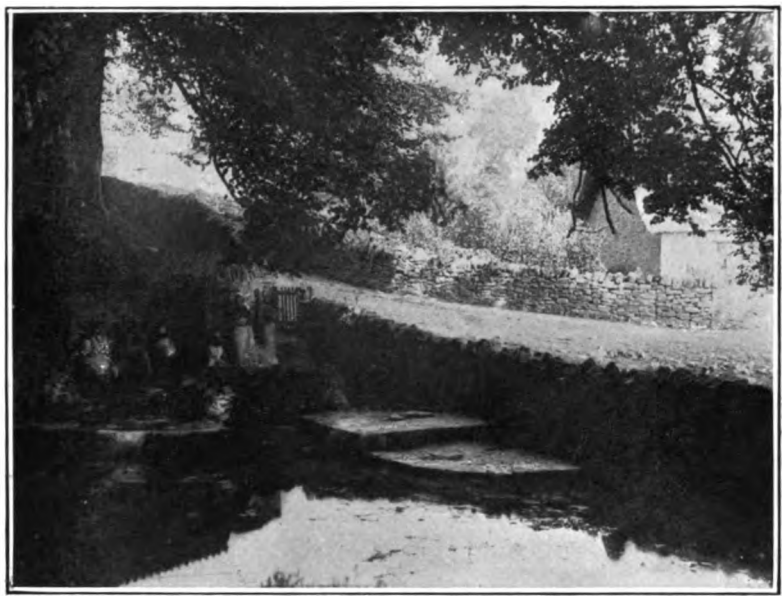


FIG. 2.—Print from untouched negative.

Landscapes.—If you wish to increase detail in heavy shadows involving much knife-work, do not apply the pumice at first.

A very sharp penknife (free from gaps) answers well. The surgeon's scalpel (see top knife in heading), ground with the left side (point downwards) flat, and the right side at an angle converging to it and slightly curved (fig. 1) is much better. Or, when carefully set, the retoucher's knife on the market as illustrated in the lower portion of the heading to this article is just the thing. With the scalpel side, broad surfaces can be judiciously lightened, and with the point sharp detail can be made.

Hold the knife as you would a pencil, but leaning over slightly to the left, say one or two degrees off the right angle, and work the blade from right to left, and sometimes backward and forward. With a little practice knife-work on prints is quite easy to do.

Having done what is necessary in this way, apply some pumice all over the print, wipe off, and stump in shadows, soften high-lights, put in clouds, etc., bearing in mind to arrange their lighting as the landscape requires.

If you have a white sky, and light clouds are necessary (dark clouds would imply that the sun was behind them), first stump in the sky—not the clouds, which you will form by so doing—and then put the shadows into the latter. Remember when nearing the horizon to make the sky (usually) lighter than it is higher up.

Now put in sharp detail with brushes and black paint, use the rubber over any clouds and tints where necessary, and your picture should be finished. But you may do a *little* with Chinese white if necessary, although the knife is as a rule the better and quicker instrument to use.

In place of Conté sauce, a mixture of it with very finely powdered carbon (as used in arc lamps) may be used, and gives a bluer color.

If you have done knife-work on glossy prints, encaustic paste (see *Figures, Facts, and Formulæ* for recipe) rubbed over the surface will restore the gloss. Or in the case of matt prints pumice removes all signs of the work on the surface.

Digitized by Google

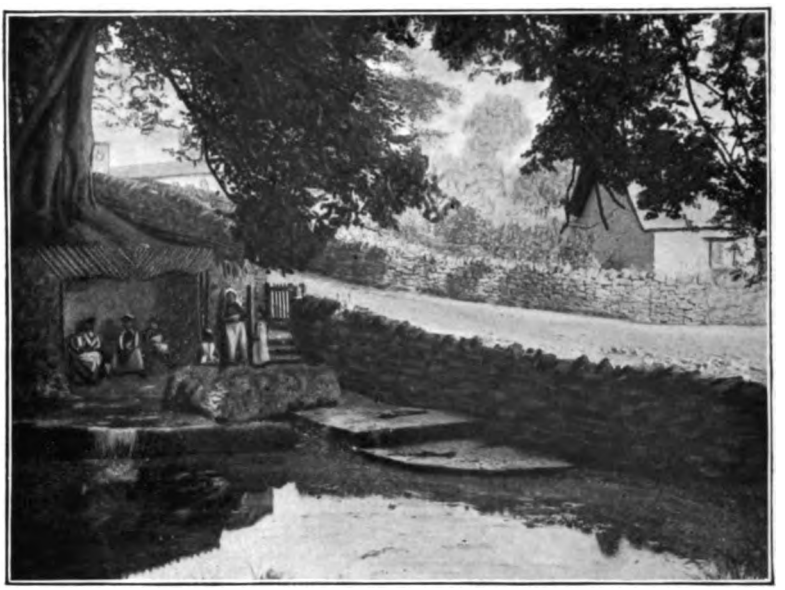


FIG. 3.—Print from retouched negative.

The landscape fig. 3 has been worked up principally with the knife and without Chinese or other white, the whole occupying about twenty minutes of time on a whole-plate print. Fig. 2 shows a duplicate print untouched.

OUR PRINT-MOUNTING COMPETITION.

1st prize (£1 1s.): "Tancred" (R. Mackay, Leeds). 2nd prize (10s. 6d.): "Desmoulins" (Herbert Miels, Bolton). Honorable Mention:—"Vegetables" (Herbert Bairstow, Halifax); "Kwimbi" (C. A. Slatter, Luton); "Watendlath" (Miss Alice Marsden, Preston); "St. Mirren" (Thos. Carlyle, jun., Paisley).

THE judging of this competition was placed in the hands of a painter and designer who is sufficiently in touch with photography to understand the aims of modern multiple-mounting. He had a great mass of examples to wade through, and it says something for the real superiority of the first prize winner and for the judgment of the critic when we find that no less than three examples by R. Mackay took places amongst the first eight. (We had asked for a selection of first, second, and six "commended").

Briefly criticising the competition as a whole the judge says:—"Most of the competitors have run crazy and altogether overdone the thing. They have killed the picture to make pieces of decoration, which are in many cases striking, often bad, sometimes good, but always inappropriate if they fail to enhance the print. The picture is not a very strong thing, therefore it needs an arrangement of quiet tones, without harsh contrasts and with no part so strong as its high-lights. Many of those thrown out include contrasts of absolute white with black or very dark brown; several have wandered into a meaningless multiplication of lines, and some have introduced colors,—and very incoherent ones.

"Generally speaking, the simpler arrangements are decidedly the best. The first prize winner surrounds his print with dark brown $\frac{3}{16}$ wide; medium brown $\frac{1}{8}$; dark (same as first) about $\frac{1}{16}$; and another medium brown 12 × 9 in. in size. The second prize arrangement has matt black about $\frac{1}{16}$; dark medium brown $\frac{1}{16}$; light medium brown $\frac{1}{8}$; and dark brown $11\frac{1}{2} \times 8\frac{1}{2}$ in."

Reproduction in black ink would not give an adequate idea of these mountings, so we do not reproduce the winning pictures.

September 1st is the last day for "Clouds." By October 1st we hope to have a great number of interesting examples of "Decorative Photography," in which the photograms are shown actually applied to the decoration of a door, a screen, a panel, the page of a book, or other object. Please do not send us the decorated object, but photograph it and send us a print.

Payment for prints of recent *fires* or their results is offered any day—see advertisement pages.

Digitized by Google

"***Photograms of the Year, 1904,***" is well in hand, and will perhaps be most notable for the number of pictures by young and comparatively unknown workers. It is not yet possible to fully estimate the contents of the volume, but the tendency, up to the present, is in favor of a strong representation of the younger men. We are still open to receive examples of pictorial work, whether intended to be exhibited or not. The book should be ready about the middle of October.

FORTHCOMING EXHIBITIONS AND COMPETITIONS.

Particulars of Exhibitions are given when first announced, and again when it is time for entries to close. Will secretaries who wish insertion please mention details below, and note that last day is 12th of each month for publication on 25th? The Editors will feel grateful for the Exhibition catalogue as soon as published.

En. = *Entries. Pic.* = *Pictures. Ex.* = *Exhibition. G.* = *Gold Medals. S.* = *Silver Medals. B.* = *Bronze Medals. O.C.* = *Open Classes. Sec.* = *Secretary.*

(1) *The Photographic Salon.*—En. and Pic., Sept. 5. Ex., Sept. 16 to Nov. 5. Sec., Reginald Craigie, Dudley Gallery, Piccadilly, London, W.
(2) *Royal Photographic Society.*—Ex., Sept. 22 to Oct. 29. En. and Pic., Sept. 8 or 9. Sec., A. W. W. Bartlett, 66 Russell Square, W.C.
(3) *Kettering Church Institute.*—Ex., Oct. 18 to 20. En. and Pic , Oct. 15. 2 O.C. Sec., B. Claypole, The Church Institute, Kettering.
(4) *Coatbridge Photographic Association.*—Ex., Oct. 15 to 29. En., Oct. 3. Pic., Oct. 6. 6 O.C. Sec., Geo. W. Campbell, Ailsa Cottage, Coatbridge.
(5) *Ilford P.S.*—En., Nov. 14. Pic., Nov. 22. Ex., Nov. 25 and 26. 1 O.C. G., S., and B. Sec., H. Cole, 160 Thorold Road, Ilford.
(6) *Newbury P.S.*—Ex., Sept. 20 to 28. Sec., J. Forster, Guildhall Club, Newbury.

Ensign Films.—£20 per month, September and October, for the greatest number of spool labels. Circular from Houghtons, Ltd., 88–89 High Holborn, W.C.
Thornton-Pickard.—£100 in prizes. 20 prizes of £5 each. Thornton-Pickard Co., Altrincham.
Luna.—£240 in prizes. Lucien Allègre & Co., 59A New Oxford Street, London, W.C.
Coxin.—68 prizes in apparatus. W. Butcher & Sons, Camera House, St. Bride Street, London, E.C.
Barnet.—£500 in prizes. Elliott & Sons, Ltd., Barnet, Herts.
Ilford.—£750 in prizes. Ilford, Ltd., Ilford, E.
"*Graphic.*"—£50 in prizes. *The Graphic*, Tallis Street, London, E.C.

Trade

Manufacturers sending apparatus for examination and notice should state distinctly whether, and when, they wish it returned.

"***Camera House Journal.***"—The second issue of Messrs. Butcher's organ, brightly eloquent on trade topics of current importance. Free to *bona-fide* dealers.

The Rotary Photographic Co., nearly two hundred strong, had a glorious day, with dinner, games, athletic sports, and brass band, at Pangbourne in the early days of August.

Kodak. Ltd., owing to re-numbering by the local authorities, now has for the address of its head office, 57, 59 and 61 Clerkenwell Road, instead of 41 and 43 as formerly.

Suter Lenses.—A full catalogue of these lenses is now issued by the Altrincham Rubber Co., the sole British agents. The list includes also Suter cameras, several forms of which, including a focal plane, are manufactured. The examples of high-speed work speak highly for the definition given by the lenses at full aperture.

A Dry Battery Electric Lamp for the dark room is offered by G. Bishop, Mary Ann Street, Birmingham. It is neatly and simply made, cased in blackened metal, measures $4\frac{1}{2} \times 3\frac{1}{4} \times 2\frac{3}{4}$ with a red window of about $3\frac{1}{2} \times 2$, close behind which the little incandescent light is set in the midst of bevelled reflectors. The lamp will stand or hang against a wall or shelf; it costs only 5s. 6d. post free, while refill batteries are 1s. 6d. each post free. It should be a very popular lamp.

Art Mounting Papers.—Mr. Jonathan Fallowfield, of 146 Charing Cross Road, London, W.C., sends us samples of the series of papers issued for the more refined forms of mounting. The set includes some very nice greys, blues and greens, and we would suggest to those interesting themselves in multiple-mounting that they ask Mr. Fallowfield for samples. The papers are sold in sheets 28×36 at 2s. 6d. per twenty-four sheets, or in cut pieces from 8×6 to 12×10 inches in shilling packets. The papers are also made up as slip-in mounts.

Mounts Illustrated.—In his latest list of mounts Mr. Jonathan Fallowfield, of 146 Charing Cross Road, W., has done wonders in actually showing the style and design of

Fallowfield's "impressionistic" slip-in mounts.

the many varieties. In 82 pages he represents cabinets, paste-downs, slip-ins, Oxford lines, crêpes and plastics and cameras, and quite a number of mounts for postcards only. "Mounts Illustrated" is sent free that mount buyers may purchase by post.

Digitized by Google

Nature Post Card Mounts are a new and attractive introduction of Messrs. W. Butcher & Sons, Camera House, St. Bride Street, E.C. They are produced in various quiet tints of grey and brown, with unobtrusive embossing in some cases, and short quotations anticipating the photographer's endeavors in others. Thus:—

A simple maiden in her flower.
Untouched with any shade of years,
May those kind eyes for ever dwell.
A rosebud set with little wilful thorns,
And sweet as English air could make her.

We do not know which to respect most—the optimism of Messrs. Butcher or the excellence and cheapness of these mounts, which are sold in 1s. and 6d. packets.

Holiday Photography is popular with the periodicals this year. *The Practical Photographer* has an excellent issue on the hundred-and-one places that are well worth visiting with the camera, and an issue of *The Photo-Miniature* just to hand is entitled *Vacation Photography*. It deals with the apparatus, the preliminary plans, the note-book, and the operations on tour; and even finds room for some special notes on the photographic conditions in Egypt, Switzerland, etc. We realised that our own *Photography on Tour* was pretty complete, but we find that both the above-mentioned publications supplement it usefully. It is not yet too late for holidays, so *The Practical Photographer* holiday number, 1s., *Photography on Tour*, 1s., and *Vacation Photography*, 6d., should be consulted by many who have not yet seen them. The combined cost of half a crown should be saved *many times* by use of the information obtained.

The Kodak £1000 Competition has been decided, and merely to list the hundreds of happy prize-winners all over the world would take some pages of *The Photogram*. The first prize-winners in the various classes were:—Mrs. R. Dunlop, Motherwell; John Dolman, Philadelphia; P. S. Greig and E. B. Vignoles, Streatly; Mrs. G. A. Barton, Birmingham; Andre Callier, Ghent; Alfred Miller, Warwick; H. Oswald Isaac, Bristol; Miss Stone, Bedford; and Will. A. Cadby, Platt.

Amongst other well known names in the prize-list are:—Victor Stouffs, Miss Kate Smith, H. Mortimer Lamb, T. F. Brogden, Eustace Calland, Emil Frechon, Wm. M'Lean, J. Peat Millar, Rev. Hy. W. Dick, J. C. Warburg, Herbert Bairstow, W. A. I. Hensler, Mrs. Myra A. Wiggins, Mrs. Carine Cadby, Henry Troth, and Fredk. H. Evans:—names which we mention merely to show that those who took prizes were far from having a "walk over."

Double-Extension Folding Cameras.—Some new cameras of Messrs. W. Butcher & Sons, Camera House, which reach our table, show the energy and persistence with which this firm ministers to photographic wants the most diverse. The No. 5 Carbine, one of the three instruments before us, is a double extension folding camera for both plates and roll film, possessing sufficient extension for the single components of R.R. lenses to be used. The two necessary focussing scales are provided, and the camera is very completely equipped in other ways with rising front, swing back, finder and spirit level. Its appearance is exceedingly handsome, and the "long focus" is an advantage which many a worker must have desired over and over again when the short extension of his camera has compelled him either to take a nearer and worse point of view or to make shift with the actual picture occupying only a quarter of his negative. The price of the No. 5 Carbine in quarter-plate is £4 4s. without lens or shutter; £4 4s. with Beck R.S.; £5 9s. with Aldis anastigmat, or £7 14s. or £9 14s. with Goerz anastigmat, Syntor or Series III.

The same advantage of double extension is given in the No. 4 Cameo, a folding camera very conveniently adapted for dark slides or a roll-holder. The same focussing screen is used in both cases, being turned one way for films and oppositely for plates. The No. 4 Cameo also is completely fitted with all the usual movements for both stand and hand work, and costs with Aldis Anastigmat, Series II., £4 4s., or £6 4s. with Goerz Syntor.

Still another instrument of the double-extension type is the No. 4 "Midg," a magazine camera for plates or cut films. The bulk of the apparatus when closed for carrying, is very little more than the magazine itself. But the base-board falls down and fixes itself in a moment, and the lens front can then be at once placed at the scale for the lens as a whole or for one of its components. The camera is supplied without a lens and with these scales loose, so that photographers may have their own R.R. or anastigmat fitted, a course which must appeal to the many who already possess a high-class lens. The price of the No. 4 Midg without lens is £3 14s.

BE BRIEF!—*We reserve the right of condensing all correspondence, but undertake to leave the meaning intact.*

Personalities barred. Whenever a man's opinions are attacked, with mention of the man's name, we wait until a proof can be sent, and the attack and reply published together.

Anonymous letters are strongly objected to, and those which are not ACCOMPANIED *by name and address of writer, for our own information, go into the W.P.B.*

"Harvesting," the picture by Mr. Dan Dunlop, to which first prize was awarded last month, should have been acknowledged to the Thornton-Pickard Manufacturing Co., who are the proprietors of the copyright, the picture having been awarded a prize by them in last year's Thornton-Pickard competition.

A Dark Room at Redcar.

DEAR SIRS AND MADAM,—For the benefit of your readers who may be in the district during the next month or so, could you find space in your editorial columns for an intimation that the spacious and fully-equipped dark room of the Redcar and Coatham Literary Institute Photographic Society is open for the use of visitors at a small charge.

I am sorry we were not able to have it included in your valuable list of dark rooms.—Faithfully yours,

PERCY H. HUTCHINSON, Hon. Sec.,
Redcar and Coatham L.I. Photog. Socy.

A Touring Suggestion.

DEAR SIRS AND MADAM,—The district round about here is very badly off for dealers, and many amateur photographers touring round Loch Lomond and Trossachs are unable to get fresh supplies of plates *en route*, and must either add to their already too heavy kit or suffer the disappointment of running short of plates or films.

Perhaps you could make known through the medium of your valuable paper that if any amateur would write me to above address, stating sizes and brand of plates he requires, I would be glad to procure them for him and keep them aside until he called for them. To prevent disappointment he would require to give a day or two's notice, as I do not stock them.

I am sure that many amateurs placed as I am in outlying districts could do this, and although deriving no pecuniary benefit from the arrangement, would be glad to lighten the burdens of their touring brother.—I am, yours, etc.,

W. H. KNOX.

Post Office, Tarbet, Loch Lomond, N.B.

PRINCIPAL CONTENTS.

Mounting the Exhibition Print. By Fredk. H. Evans.
The Portrait and the Studio.—VII. W. M. Hollinger.
"At Home" Portraiture.
Advanced Hand-Camera Work. By Walter Kilbey.
Six-Plate Promenades.—V. Round the Law Courts. By H. Springall.
From my Note-Book. By Alexander Mackie.
The Stereoscopic Photography of Clouds. By Charles E. Benham.
For Charity's Sake. By H. S. W.
Working up Bromides with Stump, Brush, and Knife.
Our Print-Mounting Competition.
Forthcoming Exhibitions and Competitions.
Trade. Correspondence.

The Process Photogram

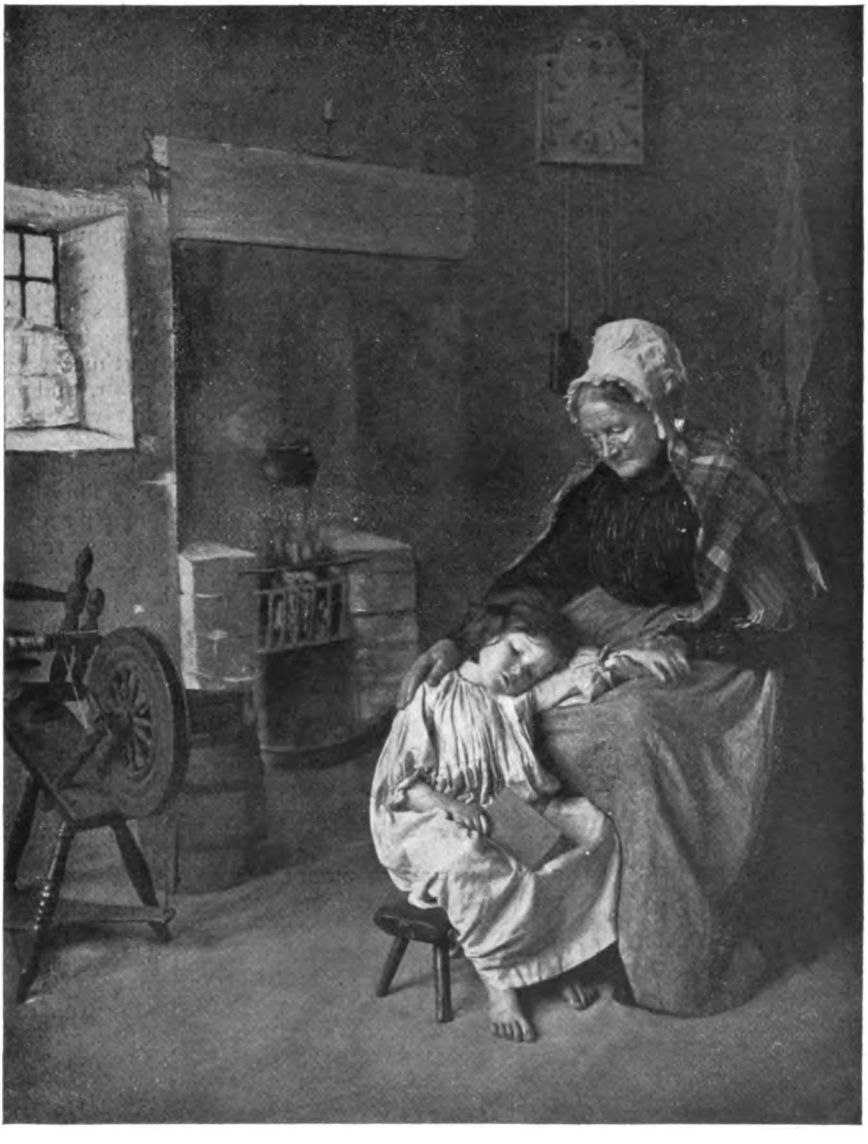
contains the whole of *The Photogram plus* the following articles and notes relating to photo-mechanical processes:—

Photogravure on Textile Fabrics. By Joseph Goodman.
A New Branch of "Process."
Process in South Australia—The Commonwealth and New Zealand.
The Manufacture of Half-Tone Screens in France.
The Etching of Photogravure Plates. By Siegmund Gottlieb.
Current Topics.

Digitized by Google

THE PHOTOGRAM

VOL. XI. OCTOBER, 1904. No. 130.



GRANNIE'S TIRED BAIRN.
By John Hepburn.

Digitized by Google

MOUNTING THE EXHIBITION PRINT

BY FREDK H. EVANS.

This series of progressive lessons in the modern border-mounting of prints, which commenced in the January number of The Photogram, *is continued each month throughout the year. The instruction is given in reference to an actual example to be mounted by the reader on the paper, or papers, of the covers.*

This month's exercise.—Print:—"Kelmscott Manor, from Thames." Mounting Papers: Lindenmeyer's "Stone," "Granite," and "Genova" (this month's covers).

For this month's exercise I have ventured to resuscitate one of my old Kelmscott Manor series, as it serves to show another variety in the treatment possible to our now familiar papers, Genova, Stone and Granite. I preferred to do this to introducing further colors in other papers, as perhaps more useful in suggesting ideas for mounting than merely giving a larger variety in mere colors; that the enthusiastic reader can easily experiment in for himself.

The sky of this subject being bare of actual cloud forms, only filled with the light of the evening when it was secured, a fairly light mount was needed, as a dark one would have heightened its bareness too crudely, though a too light one would not have agreed with the foreground. It is oftentimes very difficult to find just the tint that shall go well *all* round our print, and in that dilemma we can get help by the narrowness or width of what we place next to our print, as I can again show in next month's exercise.

The print being cut out, we place it on the Stone paper and trim it to show a margin of $\frac{3}{8}$ths at top, $\frac{7}{16}$ths at sides, and $\frac{1}{2}$ inch at foot. This has then to get a narrow white line round it, by being placed on a piece of Granite paper and that trimmed away till the line is left. This is now ready for the second margin of Stone color, by being placed on a further piece of that paper and trimming it away to a margin of $\frac{3}{16}$ths inch all round. This is now in turn ready for its white line, obtainable in precisely the same way as we did the first one. The whole can then be mounted on the Genova paper forming the bottom or chief mount, and the thing is complete.

Though this treatment is very similar to our example for June, one sees at a glance what a great difference the variation in widths makes; and by looking at the July example also, what a difference the omission of the outside piece of the Stone color makes to the feeling of the whole. The white lines were needed to be as obvious as possible, considering they must not be *more* than lines; so the outside one coming directly on to the final mount makes it the more arresting and definite to the eye.

From this we see what a great variety of mounting can be made out of but few materials, and without the need for calling in strong crude colors in great variety. The difficulty has been to get papers in sufficient variety of delicate neutral tints; the stronger sorts are sufficiently common and easy of access, but dead-surfaced papers in light neutral tints are not so easily obtainable. For this reason I have thought it most helpful to harp on the variety of effects to be obtained from a narrow selection of such papers.

Digitized by Google

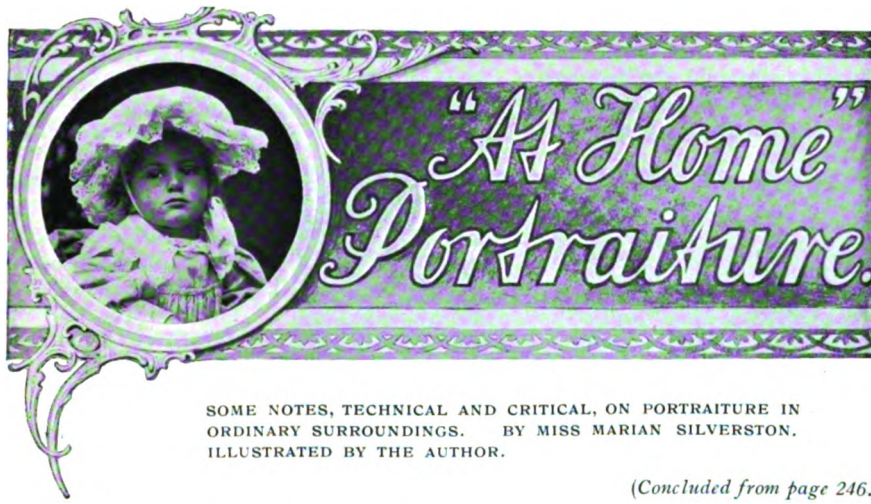
THE
JOHN CRERAR
LIBRARY

Digitized by Google

WHERE ONCE THE GARDEN SMILED.

By J. M. WHITEHEAD.

Digitized by Google



SOME NOTES, TECHNICAL AND CRITICAL, ON PORTRAITURE IN ORDINARY SURROUNDINGS. BY MISS MARIAN SILVERSTON. ILLUSTRATED BY THE AUTHOR.

(*Concluded from page 246.*)

IN "Wonderland" and "Alec" we have two somewhat similar subjects, both indoor portraits of little boys. But how different the treatment! The one dreamy and contemplative, the other full of the movement, roguishness and archness of childhood.

The small boy of the first picture was listening to the reading of a fairy tale, and although we cannot see the reader, we can gather from the expression and the attitude that something is interesting the little lad, and that he is quite unconscious of the fact that he is being photographed. The parted lips convey the idea of listening, the position of his left hand helps to show the concentration of interest, and the pose of the head, leaning upon the other hand, gives the impression of absorption.

He is sitting on a window seat, the light falling from his left; the shadow side of his face is relieved by a reflector, which consists of a white sheet thrown over a high screen. This screen is sufficiently far removed from the child to prevent too obvious cross-lighting, and yet near enough to do away with the heavy shadows that without it would have made such a position impossible. The highest light falls on the collar, and by this means the eye is at once attracted to the face. The figure is too far to the left of the picture; there should have been more space in front of it and less behind; yet further trimming would not have been of advantage, for the lines of the falling curtain cannot be spared. There is a considerable lack of detail at the bottom of the picture, the feet being buried in deep shadow; but perhaps this scarcely matters; indeed the dark mass at the base somewhat helps the general effect of massing of light and shade. The space of window seat at the bottom right-hand corner is one of the weakest points of the composition.

"ALEC."

There is often a charm in the very texture of a material, and here the soft

Digitized by Google

surface of the velvet adds a decided note of pleasure, and is peculiarly attractive and harmonious. Contrast it with that in "The Little Princes." In this example the beauty of the texture is dependent upon the way in which the light, with its attendant shadow, falls upon the material, but in No. 4, where the figures are set in full light, the velvet is little more than solid wood.

Perhaps it was because "Alec" was amusing himself that he has been caught in his unsophisticated naturalness. What possibilities of character in those chubby little features and wide-open, laughing eyes!

"THE STORY BOOK."

In "The Story Book" there is an inclination to make the composition decorative and to use the figure as part of an ornamental arrangement of lines and of masses of light and shade. Hence the use of the tapestry background, which is of considerable value. In decorative schemes such as this there is always a difficulty in deciding the relative positions of sitter and background, as the effect of space or atmosphere round the head must be secured and the right amount of diffusion of focus carefully preserved. In this particular instance one feels that the result is fairly satisfactory. The parting of the curtains, which exposes a patch of white wall immediately above the head, was perhaps ill-advised. The arum-lilies were introduced to emphasise the Madonna-like serenity and purity of the figure, but they are a distinct failure from every point of view. Too big, heavy and clumsy, they detract from the unity of the composition.

In studying lighting we may take it as a general rule that no object should be lighter in tone than the lightest part of the object of chief interest, nor any part darker than the darkest. Here we see an instance where this rule is intentionally violated and the highest light allowed to fall on the ornamental vase. This was done in order to accentuate a feeling of repose and to relieve the composition from flatness. Note the lines of the book, which are helpful as supplying support at the base.

The portrait was taken about 12 o'clock on a bright March morning, the exposure with stop *f*/8 on a "Special Rapid" plate being about 3 secs. The model was placed within a square projecting window with the light falling from the right, and the shadow side of the face relieved by a reflector.

Digitized by Google

In "My Dainty Lady" we have again an outdoor portrait which was taken one hazy autumn evening about an hour before sunset. The little girl is placed facing north in the shade of a high house with a wall cutting off the light on her right. The ivy-covered red brick wall is thrown well out of focus, for such a background is, as a rule, eminently undesirable. The eyes were sharply focussed, and the plate, an Imperial "Special Rapid," exposed without stopping down. It was developed with full strength developer, and development arrested when the portrait had gained sufficient density, and before the detail in the background was allowed to appear. By this method, while the background printed dark the portrait assumed its proper gradations. The detail in the white dress was secured by the use of matt varnish; this was poured over the back of the negative and removed from the densest portions; the printing of the thinner portions was thus retarded, and time given for the detail in the dress to print out.

"WONDERLAND."

"Little Laddie" is another example of outdoor work taken under particularly favorable circumstances. The plate, an Imperial "Special Rapid," the exposure a half second about eleven o'clock one bright June day, in a very shady garden, the atmosphere bright and clear yet the light soft and subdued. The only background at all possible was some old wooden lattice work, and unfortunately this gives an unpleasant spottiness which is far from satisfactory. Perhaps the attractiveness of the picture lies in the plaintive, wistful expression of the serious little model, who already seemed to realise in some degree the responsibilities of the coming life before him: "The thoughts of youth are long, long thoughts." No attempt was made to pose the model or in any way to secure an "expression." The entire absence of self-consciouness gives us that delightful naturalness which is indispensable to successful child portraiture.

We find, as a general rule, that the modelling of features in portraits taken out of doors is far less pronounced than in the case of indoor por-

Digitized by Google

traiture, where the light is concentrated and the shadow consequently stronger. In this particular instance, however, the light was under a certain amount of control, hence the modelling of features is in more marked relief than we are accustomed to expect in an ordinary outdoor portrait.

The vexed question of retouching is a difficult one. But I am of the opinion that a little of it, even in outdoor portraits, is generally necessary, partly for the sake of pictorial effect and partly for the sake of the likeness. The camera exaggerates the shadows and renders brown freckles and red coloring as black patches, which must, of course, be carefully removed. In such cases it is very difficult to preserve the modelling of the face. Under-exposed negatives show these defects to a far greater extent than those which are fully exposed.

"MY DAINTY LADY."

"LITTLE LADDIE."

Whatever success may be claimed for these portraits is due to their having been taken at home amidst familiar surroundings. As for "pose," the sitters were scarcely ever touched, but were allowed to place themselves, with sometimes just a slight suggestion from the photographer.

To all who attempt camera portraiture a study of the art of portrait painting and the works of leading artists is indeed of especial value. Such points as the lighting and modelling of features, the massing of light and shade, and the suitability of background to subject, should be most carefully noted and remembered. Very truly has it been said that the best poses an artist secures are those he *observes*, not those he *creates*.

Digitized by Google

THE LAST STAND.

By J. M. WHITEHEAD.

Digitized by Google

THE
JOHN CRERAR

Digitized by Google

Critical Appreciations

J. M. WHITEHEAD AND
"CONCENTRATED LANDSCAPE."

ALVA is a tiny town of some five thousand inhabitants, and its professional photographer might well be expected to be a plodding, industrious, unambitious person, unknown beyond his own neighborhood. But J. M. Whitehead is not that kind of man. He has ambition, taste, individuality, and a certain amount of diffidence, and these qualities applied to the study of those things which came readily to his hand, have secured him a most successful career as an exhibitor. His early artistic recreations took the form of study of fruit and flowers; subjects which lend themselves to studio methods, and which were accessible on most occasions—often when it might have been impossible to go far afield for landscape work or to secure suitable human models. For a time his results were not shown in any public manner, though he sought and carefully considered all the criticism he could obtain. His first introduction to the public was in April 1898, when two of his flower studies were reproduced and criticised in this magazine. In the following year his "Roses" received the medal of the Royal Photographic Society, and since then we have seen a few examples of the same class of work each year. Of these, there have been reproduced in *Photograms of the Year*—"Gowans," 1898; "Summer," 1899; "June," 1900; "Autumn Fruit," 1901; "Fruit Study," 1902; and "La Tulipe," 1903. The *genre* of still life is not very ambitious, but Mr. Whitehead succeeded in making his own work distinguished, and one of his fruit studies, or "La Tulipe," may be taken as the highest achievement in its class.

While building up a success and reputation with these relatively modest subjects, Mr. Whitehead was developing a new line of study in what may be called concentrated landscape, in which he made his first decided hit with "The Witches' Tree," shown in the R.P.S. Exhibition of 1901, and reproduced in the corresponding volume of *Photograms of the Year*. In his treatment of landscape textures, Mr. Whitehead recalls the best days of Colonel Gale, but his selection of theme, and his "feeling," are quite different. He likes a composition with few lines and simple masses, and with very concentrated interest. "The Witches' Tree" was just a gnarled, leafless hawthorn with a rough pathway curving around it and away over a rise, to a mild sunset. The very absence of theatricality in the sky enabled the tree to strike a bold note and dominate the scene; and the bare, harsh tree, strongly placed, emphasised by contrast the soft tones of the landscape and the sky. With quite different lines, the same general arrangement is repeated in "The Last Stand" (a supplement to this number), one of the notable pictures of the past few years. Though it almost missed comment when shown at the R.P.S., it is an effort well worthy of study, and, although it is difficult to compare pictures so different as the two we reproduce this month, we incline to the idea that "The Last Stand" is the finest piece of work yet done by Mr. Whitehead. It is wonderfully

Digitized by Google

"THE GOOD THINGS OF LIFE."

strong in its simple dignity, with a curious touch of pathos about the despairing, dauntless attitude of the last survivors of a fence of rails. Many a pretentious "last stand" of human warriors has made a popular success while entirely lacking the pathetic suggestion here conveyed by mere hedge-stakes relieved against a waste of land and a simple sunset. Does this suggestion verge on bathos? I think not. The attribution of human feelings to inanimate objects can easily be carried too far; but both in poetry and art we think of rocks as sternly resisting the sea, the sea as consciously attacking the land, and in the same way Mr. Whitehead read the symbolism of the lines of his composition before giving its title to the picture. This touch of sentiment is the thing which converts a "local view" of no interest into a "picture" with an interest which is definite; and the feeling of such sentiment cannot be taught.

"Where once the Garden Smiled," is a good realisation of the poet's idea of a decaying structure, broken by the touch of time, yet mellowed by the hand of nature. It is a piece of careful selection and careful photography—perhaps a little too fussy in the right foreground—with nothing heroic or surprising in its achievement, yet winning a great and an enduring success by strict attention to "the unities." It is worth dissecting, to see how a perfectly commonplace subject, by straightforward treatment, by adherence to one dominant idea, and by use of a completely appropriate title embodying that idea, has been lifted far above the commonplace.

This, like the other pictures mentioned, is an example of Mr. Whitehead's distinctly characteristic work—what we have termed "concentrated landscape." In its treatment of tones and textures it is reminiscent of studio methods. With all its softness it has strength, as a result of using few masses, and simple incidents. Concentration is secured, without any trickery or evasion, and with very little "local treatment," merely as a result of very careful selection. Mr. Whitehead realises the limitations of his process and works well within them, with the result that he gives us a steady run of assured successes, free from the frequent failures as well as from the startling triumphs that fall to the lot of the bold experimenter.

Digitized by Google

ADVANCED HAND-CAMERA WORK.

by Walter Kilbey.

Conclusion. Photographing divers. Previous issues have dealt with the focal-plane shutter and its use for other difficult subjects.

ALTHOUGH I lived for some years within a few minutes' walk of the rendezvous of some of the finest divers England has produced, and was able at that time to pay one or two visits weekly, I confess as an "encouragement" to others that it was months before I secured anything that gave me the least satisfaction. Many things militate against the photography of divers, that do not obtain when dealing with athletics or other sports; and so one need not blush at one's failures. I have known a number of focal-plane shutter experts who were able to get their subjects

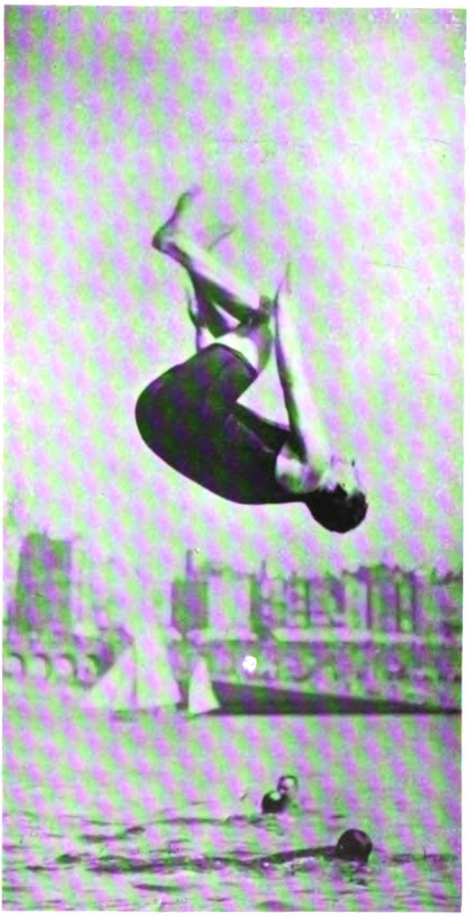
"A FLIGHT OF ARROWS." Negative on a Warwick plate. Reproduction by permission of the Warwick Dry Plate Co. 1-1000th sec. at *f*/6 with Goerz-Anschutz focal-plane shutter.

almost exactly on the part of the plate they desired, until they tried divers, and then — well, they were almost as much at sea as the tyro, therefore the latter should not be discouraged if the results upon development are found at first to be rather disappointing. The first mistake generally made, is to photograph the diver from the same level as the diving-board. This nearly always happens when the diving takes place from a pier or river bank. In the former case there is also a temptation to point the camera down, because most of the divers take the water from below the deck of the pier from which you may be watching them disporting themselves. Now this is wrong. When photographing divers, you should, to secure the most striking results, always endeavor to

Digitized by Google

select a position much lower than that of the diving-board. The exceptions to this rule will be when you have no choice but to take them from above, or when you may wish to secure some particular result. As I have just indicated, to obtain the best result the diver should be photographed from below, but I would like to point out that that does not mean that the higher the diver is above the photographer the better will be the result; for in this case you would have to tilt the camera very much out of the horizontal, and in the case of a fifty or sixty feet dive, the figure would (with a lens of ordinary focal length) appear very small.

"WALKING ON THE WATER." Taken with a Cooke lens at *f*/6. *Copyright.* 1-700th sec. at 7.30 a.m. with Thornton-Pickard focal-plane shutter.



"A BACK SOMERSAULT." 1-900th sec. at *f*/6·8: Goerz-Anschutz focal-plane shutter. (From an enlargement.)

To secure good results the novice must set about the photography of divers in some methodical manner, and the writer would suggest that possibly the best position the operator can take up at the beginning is about twenty or thirty feet below the level of the diving-board, preferably in a boat, and about fifty feet from the path the diver will take in his flight. Then carefully arrange the focussing, set the shutter, draw your dark-slide shutter. Now, presuming that the finder in use is one of the "brilliant" type, or even a full-size one, the next thing to do is to hold the camera in such a way that the diver can only just be seen in the top corner of the finder which is diagonally opposite that corner where he is to disappear; then as soon as he springs, release the shutter. At first, all that will probably be seen will be a sort of streak in the

Digitized by Google

finder, but as the operator becomes more used to this quick work he will be able to watch the image as it travels through the finder, and later on, when he has gained further experience, he will be able to release the shutter at the identical moment when the diver is in the best position. When he can be sure of accomplishing this, he may decrease the distance between himself and the diver, until he gets to within about seven or eight yards, which will be, I think, as near as one is at any time likely to require to work.

"AN EARLY MORNING DIVE." Taken with a Cooke lens at *f*/6. *Copyright.* 1-800th sec. with Thornton-Pickard focal-plane shutter, at 7·30 a.m. on a September morning, with a medium plate.

If the exposures are being made from a boat, the boatman should be instructed to keep her heading away from the divers, so that the lens may have an uninterrupted view over the stern. Working from this position has the advantage of less motion in choppy water than if the photographer conducts his operations from the bow of the boat. The latter position, too, owing to the rapid narrowing of the vessel, gives but little room to make oneself comfortable. Another thing to be remembered is, if the water is a bit rough, the provision of a boathook and "fender." The former can very often be used to keep the boat steady if working alongside a pier, and the latter is sometimes required to prevent getting "stove in." This, however, is not very likely to happen, as the boatman will generally keep his craft well out of harm's way; in fact, he is frequently too careful about this, inasmuch as if he keeps well away from the pier the photograph will be too frontal, which is about the worst point of view, for there can be very little effect if the diver be mixed up, so to speak, with a background of wooden piles or stone-work. There is no doubt, in my mind, that to obtain the most effective dive, the camera must be low down and to the right or left of the diver.

When showing my results on diving subjects, it is generally suggested that they are all taken at mid-day. This, however, is far from being the fact. Of course, to get the fullest exposure, mid-day in mid-summer—providing it is not snowing, and there are no sunspots about—will be the

Digitized by Google

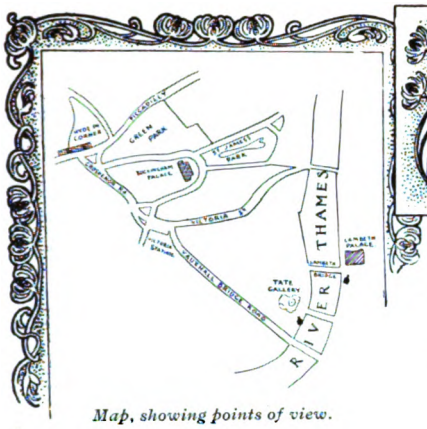
best time to work. I have made as many, if not more, exposures before 8 a.m. than at mid-day, and I have no hesitation in saying that one should have no anxiety about results between 7 a.m. and 5 p.m. or 6 p.m., if due attention be given to the instructions upon developing already given. The light at mid-day, if brilliant sunshine, is apt to give rather too much contrast; early or later in the day the light is often more diffused, and even if very sunny the lighting will be rather more pleasing than a hard top-light. The photogram on page 273 will show what can be done at $\frac{1}{800}$ sec. on a medium plate, even when there is a good deal of mist about, and at the comparatively early hour of 7.30 on a September morning.

In conclusion, just a word as to where to photograph divers. The reader will generally know the nearest rendezvous of high divers; they are dotted about all over the coast, but among the places resorted to by our best divers may be mentioned Brighton, Shanklin (Isle of Wight), Rhyl, Sandy Cove, near Kingstown (Ireland), and the Ponds on Parliament Hill Fields, Hampstead, London.

In conclusion, I may respond to the wishes of those who ask for some hints on photographing children at play, having been interested by last month's photogram, "Pure Joy." The subject is one which is well worth the attention of the more advanced hand-camera worker. The focal-plane shutter has been condemned, unjustly I think, as giving untruthful and unpictorial results; but be that as it may, such results are obtainable only with this piece of apparatus. The movements of children intent upon some game are excessively rapid, and may require not only much tact and patience, if a successful and realistic picture is to be secured, but an extremely short exposure. Not only has one to consider the movements of the children themselves, but also that of the arms and legs, which in the excitement move at a well-nigh incredible speed. Such subjects as children engaged in playing leap-frog, battledore and shuttlecock, and skipping, or one of the many round games that children play, will necessitate an exposure of $\frac{1}{200}$ to $\frac{1}{1000}$ sec., according to the rapidity of movement and the distance from the camera. Most of these will be found to be impossible with an ordinary shutter, though some of the quieter games might be secured at about $\frac{1}{100}$ if one stood well away from the object. A visit to the nearest playground or recreation ground will give many opportunities for practice in this class of subject.

Now just a word as to the necessary exposure. Working at a distance of from 15 to 20 feet from a squad of boys engaged in leap-frog, $\frac{1}{200}$ sec. to $\frac{1}{300}$ sec. will generally be found ample, and if the light is very brilliant, and a large aperture be used—as it should be, to concentrate interest in the boy that is leaping—the plate is more likely to suffer from over than under-exposure. On the other hand, for such sports as the "giant stride" it will be necessary to get further away, especially if you wish to include the top of the pole, and all the participants in this exhilarating game. Here depth of focus must be arranged for, so that if you do not wish to, or cannot, get sufficiently far away to work the lens at "infinity," a smaller stop must be employed. Under favorable conditions, $f/8$ or $f/11$ should prove no detriment, as the shutter at the distance indicated need not be driven faster than about $\frac{1}{250}$ or $\frac{1}{300}$ sec., although the movements of the children may be fairly rapid.

Digitized by Google



Map, showing points of view.

SIX-PLATE PROMENADES

A series of brief walks with a camera in London—continued from September issue.

VI.—FROM LAMBETH TO HYDE PARK.

By A READER OF *THE PHOTOGRAM.*

Exposure No. 1.—The Tait Gallery.

My instructions were to commence in the morning with the Tait Gallery, go from there to Hyde Park Corner, return in the afternoon to Lambeth Palace. The light in the morning is right for the Gallery, and my exposure was made from a wharf erected by the builders of a large block on the Embankment. This special coign of 'vantage may be there only temporarily, though the scene had the appearance of a Government contract. Arriving at Hyde Park Corner *via* the Vauxhall Bridge Road and Grosvenor Road, you can pick and choose your subjects. There is the Duke's statue, and opposite to it Apsley House (Exposure No. 3), where Wellington—

. . . . "an attitude he took
To see the statue of himself, and
Judge how it would look.

Go tell Sir Frederick Trench,
Tell him in accents clear,
Each judge of art at such a sight
Must wipe away a tear."

Exposure No. 2.—The Duke.

The islands among the traffic at Hyde Park Corner might occupy a photographer for an hour or two. There at the foot of the Duke's statue are Monsieur and Madame arm-in-arm, an American girl is snapping them, with Wellington for background.

Exposure No. 3.—Apsley House.

Digitized by Google

Exposure No. 4.—Entrance to Constitution Hill.

You will meet every kind of foreign visitor and every type, almost, of Londoner. A stone's throw away in one direction is Rotten Row; in the other, Green Park and St James'. For Buckingham Palace you must arrive early in the morning if you want the conventional "good lighting." The shadow of its great frontage is deeper still as the day progresses. The archway of Constitution Hill is only one of a number of subjects on which one or two plates can be spent. Photographed from Piccadilly (Exposure No. 4), it is difficult to get it without the heavy goods traffic and prosaic four-wheelers on their way to Victoria Station; but from a point of view on the Hill itself, leading down to Buckingham Palace, vehicles befitting its position in the West End are the only ones which pass (Exposure No. 5).

Retracing our steps to the river we cross to Lambeth Palace, now pleasantly lighted. From a view point on the footway by the riverside we make our exposure with the satisfying feeling that our duty has been done, and that the advantages of the planned walk over the series of visits arranged on non-photographic grounds have once more been demonstrated.

Exposure No. 5.—Constitution Hill.

Exposure No. 6.—Lambeth Palace.

Our contributor omits to say that the proprietors of The Photogram *offer a calculator by which anyone can discover the hour at which a given building is appropriately lighted. It is sent with seven other cards on receipt of one penny stamp.*

Digitized by Google

THE PORTRAIT AND THE STUDIO

VIII.—MISSES GARSTIN and ANTROBUS.

In previous issues:—The work of Fredk. Hollyer, B. J. Falk, Harold Baker, C. H. Braithwaite, W. Scott, C. H. Evans, H. M'Michael, Pirie Macdonald, Mrs. Käsebier, Martin Jacolette, Hollinger. To follow:—H. Walter Barnett, Elliot & Fry, Langfier, Ltd., and others.

Copyright by The Photogram, Ltd., England.
Copyrighted 1904 by Tennant & Ward, New York.

THE studio of Misses Garstin and Antrobus is especially interesting because it is "quite different." In the first place, the ladies who are responsible for its success have not gone through the usual course of studio training. They are pupils of the Polytechnic School of Photography, owing all they know of the craft to the excellent staff of that institution. In the second place, the studio is a ground-floor apartment in a private house in a West End street (New Cavendish Street, W.) which has hitherto been sacred to doctors and professional men. It has no showcase, and no display beyond a modest brass plate, alongside the similar plate of the medical man who occupies the front of the same floor. In the third place, the studio is a back room, without any natural light, and the exposures are made by means of the "enclosed arc" lamps of the Westminster Engineering Co., Ltd., London, N.W. Thus it will be seen that Misses Garstin and Antrobus are decidedly innovators, pioneers of a new movement, and, therefore, very interesting. They both wished to go into business, studied photography under Howard Farmer, and acted under his advice in the fitting of their studio after they had decided upon adapting ground-floor rooms in a building not previously used as a studio.

The aim of these ladies is to reach a number of people who do not patronise the ordinary studios, especially elderly ladies, invalids, and children; but they are quite prepared for all classes of sitters, and some of their most satisfactory portraits are of men. For the special class, the privacy of the building, its position in the residential West End, the absence of stairs, and the home-like nature of the surroundings, are expected to prove attractive. The reception-room is the sort of place where a cup of afternoon tea might well be enjoyed, and has no suggestion of studio or business; yet the studio is only separated from it by a pair of curtains.

In operating, one of the ladies superintends the pose, arrangement of

Digitized by Google

background, etc., while the other attends to the lights, first for focussing, and then for the exposure. The focussing and management of the camera are in the hands of a male assistant. The lighting is all on one side of the room, from which the lamps are divided by a partition of ground-glass windows, something like the side of a studio. Several lamps are in place, and by using different arrangements of them, a considerable variety of lighting can be obtained. The light is of a soft, violet tint, not at all startling to even the most nervous sitter, yet powerful enough to allow of the ordinary exposures being from two to four seconds, while very much shorter ones can be made when children or animals render them necessary.

A NOTABLE SCOTTISH EXHIBITOR.

A note in reference to this month's frontispiece—"Granny's Tired Bairn," by John Hepburn, of Glasgow.

THE greatest thing that was done by the Scottish Salon, held in February last in Perth, was the discovering of a number of new workers in photography. Probably several of them will be represented in the London exhibitions of this autumn, but however that may be, the important point is that they will all be at the second Scottish Salon in Glasgow next year. Such an exhibition in no way competes with the international shows, but it does a very useful work in strengthening and encouraging one section of workers and bringing them forward for the larger concerns; and it has another function, similar to that of the Eisteddfods and Highland Gatherings, in preserving whatever is national and distinctive.

The Scots suffer, as all would-be pictorial photographers do, from the very universality of our art, which tends to make all run after the same fashions. Yet some of their strong men have kept touches of what may develop into national characteristics, and some of the younger men show this strongly. It will be good for them, and eventually for the craft, if they can establish a really Scottish school, even if it means lesser success for a while, in London.

John Hepburn, of whose work an example is given on the first page of this number, is one of the younger members of the Scottish school, and his work is typical of what appears to be rather a national tendency to interpret the homely, domestic side of life. To produce a "Cottar's Saturday Night" in photography is no mean ambition.

The American Salon.—The American Federation of Photographic Societies (which includes a couple of new and five older organisations) is straining every effort to make its first exhibition, opening in December next, a great success. The president asks us to impress upon our readers the importance of this exhibition, "the first Salon ever held in New York, and the first of national scope ever held in America. The Salon will be held in Washington, Boston, and Chicago, immediately after the close of the New York exhibition. All work entered will be fully insured and framed at our expense." The management includes Charles E. Fairman, F. Dundas Todd, Rudolph Eickemeyer, and F. C. Beach, with others, well known in America, though less so in Britain.

Pictures are invited from workers in all countries, and all entries, whether from members of the federated clubs or not, are to be submitted to a selecting committee of painters, without any photographers, though some of the selectors may know a little of photography in an amateur way. We are not sure that this is the ideal selecting committee, but it will, at least, be safe against charges of individual prejudice, and those who have fought and written in favor of such a judicial body should strongly support its first trial. With anything like a sufficient number of entries, such a jury should select an exhibition of great interest and very real educational value; and we may hope that a few hitherto unknown workers will come forth.

The new Salon is not supported by the New York Camera Club, nor is the Photo-Secession, as a body, taking any interest in its affairs.

Digitized by Google

KELMSCOTT MANOR FROM THE THAMES. BY FREDK. H. EVANS.

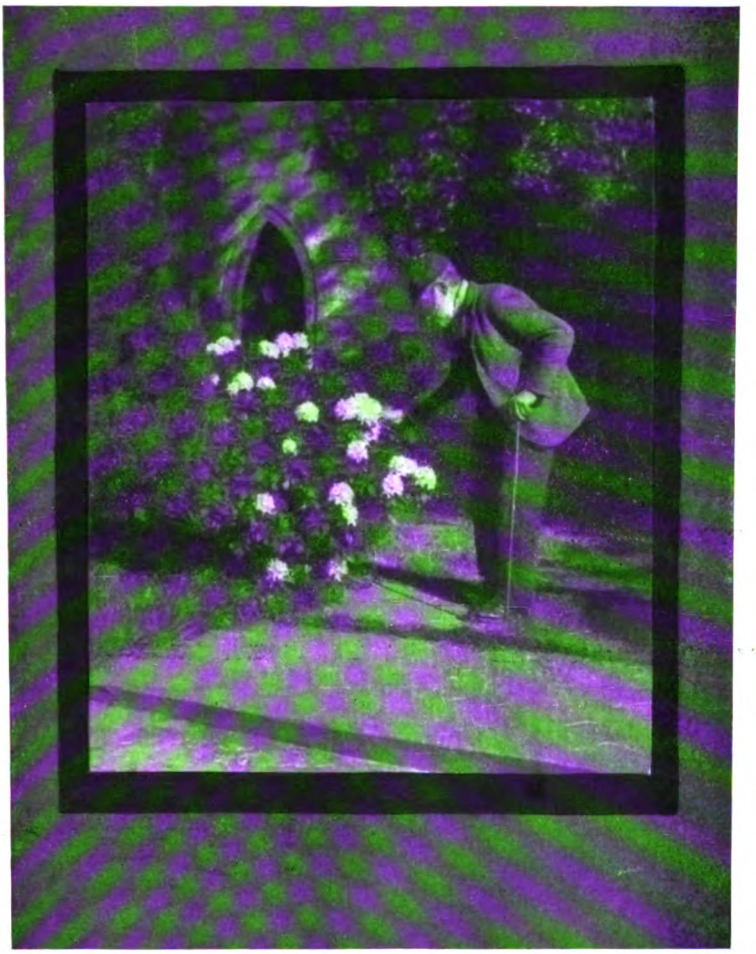
MOUNTING THE EXHIBITION PRINT.

The picture portion of this supplement to be cut out and mounted as directed in Mr. Evans' article. The outside mount of Genova, not shown here, measures 7¼ by 13¾ inches.

Digitized by Google

JOH...
LIBRARY

Digitized by Google



"IN MEMORIAM." *By James Shaw.*

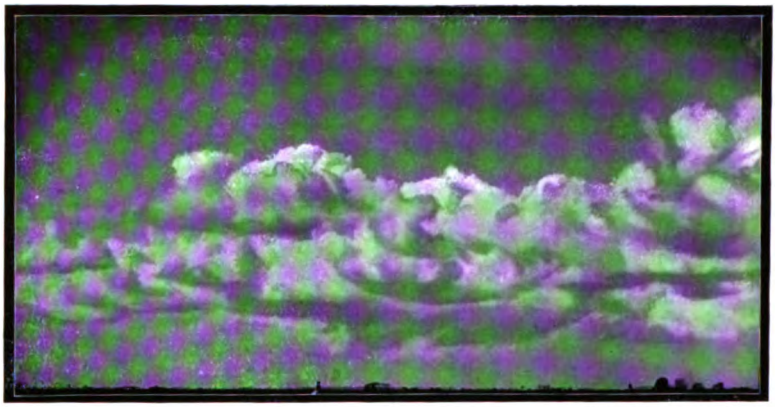
The Photogram Outing Competition of the Manchester A.P.S.

FIGURES-IN-LANDSCAPE COMPETITION.

THE Manchester A.P.S. has successfully held its second annual figures-in-landscape competition for prizes offered by *The Photogram*, and we reproduce in this issue prints from the first and second competing sets (see p. 281). The secretary, Mr. F. W. Parrott, writes:—"The presentation of last year's awards aroused great interest and formed quite a pleasing little function,—and there are already enquiries as to when the next *Photogram* ramble is to be held." Fourteen of those who attended the ramble sent the necessary sets of three prints for this year's competition, and the first three positions were awarded to:—1, James Shaw; 2, A. W. Harrison; 3, J. J. Phelps.

Other societies wishing to arrange for similar competitions will find in our issue of May this year the simple conditions upon which we are prepared to give *Photogram* awards for the best and second-best sets of prints.

Digitized by Google



FIRST PRIZE. *By F. Sweetland Cocks.*

CLOUD PHOTOGRAPHY.

Competition No. 9.

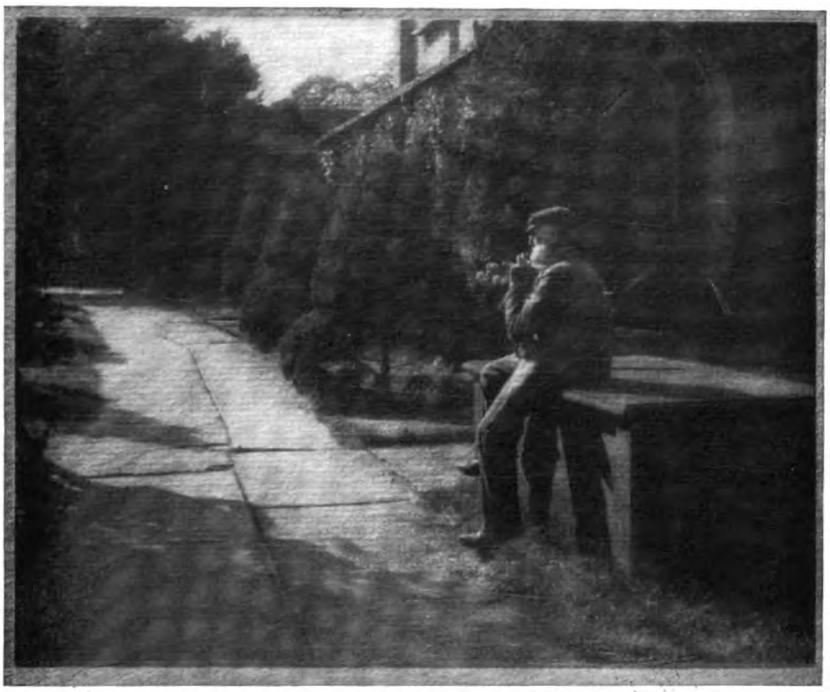
AWARDS.

1st prize (£1 1s.): "Landho" (F. Sweetland Cocks, Peterborough). 2nd prize (10s. 6d.): "Condercum" (Will Maitland, Newcastle-on-Tyne). Honorable mention: "Orthos" (Francis Fielding, Manchester): "Albatross" (P. S. Gorig. R.E., West Liss, Hants): "T. R. Ipod" (R. M'Gahey, Belfast).

THE print by "Landho" reproduced on this page is one of twenty, all technically good, though not all rendering so so well the light and airy "texture" of clouds. In general technique no less than in the particular texture-rendering, many competitors failed to reach a moderate standard. Such defects as spots and pinholes find you out in cloud photography as in no other branch of camera work, and spotless negatives imply clean, almost faddy, methods at every stage. Many competitors also failed

SECOND PRIZE. *By Will Maitland.*

Digitized by Google



"AFTER TOIL COMES PEACEFUL REST." *By A. W. Harrison.*
(See "Figures-in-Landscape," page 279.)

to get clouds with any typical form about them, very beautiful though some of the mixed skies were.

Regarding the technical methods of the prize-winners, the negatives of Mr. Sweetland Cocks were all made on ordinary (not isochromatic) Ilford plates without a screen, the average exposure being one quarter second at *f*/32, and the developer pyro-soda.

The subject by Will Maitland was taken on a Seed isochromatic without screen. Exposure at *f*/32, $\frac{1}{10}$ of a second.

The series prize of £5 5s. now stands as before between:—W. Foster Brigham, 8; Clarence Ponting, 6; A. J. Loughton, 5; R. Mackay, 5, etc.

The prints of decorated objects should reach us Oct. 1st, and on Nov. 1st the entries for the "Seashore" competition—the most pictorial photogram of seashore with or without figure.

The "Fire" competition is a standing one. See special rules in advertisement pages.

A NOVEL SIGNAL FOR LANTERNISTS.

MANY and various have been the devices for signalling for change of slide between operator and lecturer, and most of them, in fact we might say all of them, up to the present have been failures. The crude and obsolete "Next, please," gave way to the thump on the floor with the pointer, which in its turn has been supplanted by the monotonous clicker, the electric bell, and a tap by electric connection. All these ways of signalling have failed in their purpose. They are all of them too much in evidence, and the click or rap or other device is soon found out by the ubiquitous small boy who anticipates the signal, and by imitating it causes merriment in the audience at the wrong moment. The new device is to employ the now common electric pocket flash lamp for the signalling. A twin flexible cord is carried from lantern to lecturer, and the lamp placed in a suitable position on the lantern table; a small push is kept by the lecturer, and each time a change is required he simply "presses the button" and the flash is seen by the operator. The lamp can be so placed that no one but the man at the lantern can see it. The slight expense is also a great consideration, as these lamps can be procured now from 1s. 6d.—R. BORROW.

Digitized by Google

A Salon and Congress will be held at Brussels in July-August, 1905. M. Vanderkindere, Palais du Midi, has the arrangements in charge.

The Traill-Taylor Lecture will this year be delivered early in December by Dr. R. T. Glazebrook.

"Photography in Advertising" is the subject of No. 63 of *The Photo-Miniature*, which is full of the experience of an advertiser's illustrator. Experience such as this costs much to gain, though our compact and ever practical contemporary is still sixpence. This same issue announces four competitions, a new feature with the "*P.M.*"

"Toning Bromides."—In our advertisement pages this month appears the announcement of a work by Mr. Winthrope Somerville which our publishers have just issued. Needless to say, its subject is bromide, Mr. Somerville's pet printing process since time immemorial. Its exact title, as stated above, explains the particular side of bromide work on which it treats. Direct and to the point as Mr. Somerville is, and refusing to advise where he has not proven for himself, we are hopeful of a warm welcome for his seasonable book.

Gum—with variations.—From the office of *Apollo*, Dresden, a practical text-book on pigment printing has appeared. The author is R. Renger-Patzsch, and he views gum as a direct development process which can give him permanent prints possessing fine detail. His aim is quite the opposite of the majority of gummists, and his methods likewise different. They are stated in commendable detail, and include the preparation of the paper and printing, single and multiple. Orthodox gum and commercial gum-bichromate papers also receive notice, among the latter the new "Crossed Swords" pigment paper of Messrs. Zimmermann.

"Photo-Printing," by Hector Maclean (Upcott Gill; 1s.)—A re-edition of "Popular Photographic Printing Processes." The contents include P.O.P., bromide, gaslight, platinotype and carbon. Why not gum? It ought to be in a book which follows so closely on the stream of progress as to include Mr. Sterry's bichromate method of making soft bromide prints. In the chapter on toning bromides, it would have been better to connect the "boiling" and "iodine-sulphide" processes: as arranged, it is not clear that the chemical basis of both is the same. And there is not a word about the doubtful permanency of uranium tones. But such few defects apart, the volume is a concise and reliable guide to printing processes of to-day. It is plainly worded, and contains many references to articles by the author and others.

Books Received.—*Annuaire général et international de la Photographie*, 750 pages. (Paris: Plon-Nourrit, 8 Rue Garancière; 5 francs). A review of photography, technical and pictorial, with the facts and figures of societies and the trade in France. An immense book, with many reproductions of pictures by all classes of photographers. —The 1903 Paris (Photographic) Salon. A large volume of reproductions and a few notes (in German) by way of criticism (Halle: W. Knapp; 5s.).—*Das Photographieren mit Films* (Berlin: Gustav Schmidt; M 1.20). A second edition of Dr. E. Holm's German work on Film Photography.

FORTHCOMING EXHIBITIONS AND COMPETITIONS.

Particulars of Exhibitions are given when first announced, and again when it is time for entries to close. Will secretaries who wish insertion please mention details below, and note that last day is 12th of each month for publication on 25th? The Editors will feel grateful for the Exhibition catalogue as soon as published.

En.=Entries. Pic.=Pictures. Ex.=Exhibition. G.=Gold Medals. S.=Silver Medals. B.=Bronze Medals. O.C.=Open Classes. Sec.=Secretary.

(1) *Kettering Church Institute.*—Ex., Oct. 18 to 20. En. and Pic., Oct. 15. 2 O.C. Sec., E. Claypole. The Church Institute, Kettering.
(2) *Coatbridge Photographic Association.*—Ex., Oct. 15 to 29. En., Oct. 3. Pic., Oct. 6. 6 O.C. Sec., Geo. W. Campbell, Ailsa Cottage, Coatbridge.
(3) *Glasgow Eastern A.P.S.*—En., Nov. 14. Pic., Nov. 16. Ex., Nov. 26 to Dec. 3. 3 O.C. S. and B. Sec., John Brough, 68 Dalmarnock Street, Parkhead, Glasgow.
(4) *Watford C.C.*—En., Oct. 5. Ex., Oct. 26. Sec., H. J. Frayfoot, 3 The Parade, Watford.
(5) *Isle of Wight P.S.*—En., Oct. 6. Ex., Oct. 19. Sec., J. H. Burgess, 53 Pyle Street, Newport, I.W.
(6) *Rotherham P.S.*—En., Oct. 10. Ex., Oct. 19. Sec., H. C. Hemmingway, Tooker Road, Rotherham.
(7) *Frome Mech. Inst. P.S.*—En., Oct. 22. Ex., Nov. 3. Sec., B. J. Mitchell, 3 Willow Vale, Frome.
(8) *Motherwell Young Men's Inst. C.C.*—En., Oct. 22. Ex., Nov. 3. Sec., Jas. Dunlop, Myrtle Bank. Motherwell, N.B.
(9) *Sheffield P.S.*—En., Nov. 5. Pic., Nov. 14. Ex., Nov. 21 to 26. 6 O.C. S. and B. plaques. Sec., James W. Wright, 62 Vale Road, Sheffield.
(10) *Hackney.*—Ex., Nov. 9. Sec., Walter Selfe, 70 Paragon Road, Hackney, N.

Digitized by Google

Trade

Manufacturers sending apparatus for examination and notice should state distinctly whether, and when, they wish it returned.

Catalogues, Price Lists, and Descriptive Pamphlets.—*Dorett & Martin*, 60 Strand, W.C.—List of photo-jewellery. All kinds of pendants, lockets, brooches, pins, etc., in which a tiny circular print can be inserted. The prints themselves are supplied. Messrs. Martin are first in meeting photographers' wants, and the line is one which can be made profitable.

Sanders & Crowhurst, 71 Shaftesbury Avenue, London, W.—A book of illustrations showing how the "Birdland" camera meets the requirements of the natural history photographer.

Vanguard Manufacturing Co., Maidenhead.—Photographic preparations of all kinds. We are glad to see the list of Vanguard specialties increasing. It shows public discrimination of a genuine article.

London and District Photographic Co., 16 West Ella Road, Willesden, N.W.—Trade work for professionals. The supplement on rough Wellington platino-matt speaks well for the work of this firm, which now undertakes carbon and other processes, enlarging, and all kinds of trade work.

Spiers & Pond, Ltd., Queen Victoria Street, London, E.C.—A large list of the best apparatus. The selection of hand and stand cameras is a very good one; all kinds of accessories. An alluring list—which is sent free.

Mounts and Enlargers are two strong lines with Messrs. Butcher of St. Bride Street this season. They have literature for amateurs and dealers which repays inspection.

The Ozotype Process, continually improving, has now reached circular No. 7—the latest instructions. This and Mr. Manly's directions for "gum-ozotype" are sent free, from 1 Weedington Road, Kentish Town, N.W.

The Kodak Competition.—The exhibition of prize pictures is now open in the Strand gallery of the Kodak Co., where it will remain until December 17th. About 2000 pictures will be exhibited, and the public are admitted free from 10 a.m. to 6 p.m. (Saturdays 10 to 2).

Useful Accessories for the camera are illustrated in the Thornton-Pickard Co.'s. "sundries list" (sent free). One such is the exposure recorder shown here. Fitted to

the dark slide, it should not be long in recovering its cost, 6d., by preventing double exposures. And there are other helpful attachments.

A new Enlarging Easel was recently shown us by the Camera Construction Co. It provides very simply for focussing on ground-glass and afterwards holding even a small piece of paper in register. Many photographers still prefer to focus enlargements on ground-glass, and this enables them to do it.

Helion Printing Papers.—A new circular from the Helion Co., 11 Billiter Square, E.C., is a reminder of these excellent papers, which we hear are "going strong" among those who have got beyond the glossy P.O.P. stage. Helion paper with its platinum-like effects, obtained by printing out, deserves to be more widely known.

Electric Lights.—The latest list of the Boardman Co., 10 Southwark Bridge Road, S.E., should be in the hands of photographers who are contemplating artificial light. Mr. Boardman has equipped some of the best West-end studios, and his catalogue is a convenient means of discovering the cost and working power of an installation. It is sent free.

The Book of a Camera.—We might almost say "a book of the camera," for the latter is Messrs. Newman & Guardia's self-focussing reflex. The book describes the instrument in detail, and is incidentally a treatise in brief on the hand camera. Messrs. Newman & Guardia send it free from 90/92 Shaftesbury Avenue. The book is one that every hand-camera worker will find pleasure and profit in studying.

A Reminder to users of Barnet manufactures. Time moves apace, and in a few weeks it will be well to have prints in hand for the Barnet Competition, in which Messrs. Elliott offer £500.

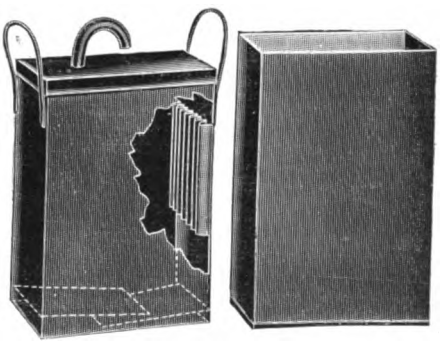
Comic Vignettes.—Mr. Tylar of Birmingham sends us a series of paper negatives and masks by which the photographer can prepare a number of highly comical portraits. The caricature body is printed first, and then the head (or heads) from one's own negatives is printed in by aid of the masks. Price 1s. per packet of ten.

Seltona "Court" Post Cards.—All thanks to the Leto Photo Materials Co., Ltd., who, from 5 Rangoon Street, E.C., now issue their Seltona as a "Court" post card, 4¼×3¼, with nicely rounded corners. The front of the card is divided for a message, and the manipulation, of course, is the same as for Seltona in its other forms. The Court cards cost 9d. per packet of 10, including two masks.

The Thornton-Pickard Competition.—In a few days, *i.e.* on October 1st, the prints for the Thornton-Pickard Co. should be arriving at Altrincham. The total prize money of £100 will be divided between twenty competitors, and as the subject is left entirely to the photographer's discretion, it should not be difficult for owners of T.-P. apparatus to enter even at the eleventh hour. Choice of a picture should be made with a view to its final purpose—the advertising of the company's goods.

For Coloring Prints, the "Velvotint" method of *dry powder* colors is one of which we have recently had experience, and which we can mention as easy to work and effective in its results. Messrs. Barnard & Son, 19 Berners Street, London, issue outfits from 2s. 8d. to 12s., complete with instructions. The process is specially suitable for matt prints, to which the powder tints are easily applied with the paper stumps issued with the outfit. The colors are fixed by simply steaming the print. The boxes include a large selection of colors, and the powder is carefully prepared.

Stand Development.—Whenever we have advocated stand development we have always felt that there was one weak point in our advice—the scarcity or the expense of suitable troughs for the purpose. This canker in the rosebud Messrs. Houghton's Ltd. have now removed, and it is to be hoped that the obstacle to the practice



of automatic development is removed with it. In the "Standa" tank, now on the market, six plates or cut films can be developed at once in the tank, and once the grooves are charged in the dark room the remaining operations can be performed anywhere. This is possible from the tank being held in an outer one, into which the developer is first placed and then allowed to enter the inner tank. The whole apparatus is without mechanism, and costs from 3s. to 9s.

Valento (The Leto Photo Materials Co., 9 Rangoon Street, E.C.).—This is a new collodio-chloride paper giving black or warm tones of great richness. It is suitable for platinum toning alone, or for gold followed by platinum. The results which we have obtained enable us to strongly recommend the paper. Care should be taken to print to full depth until the print bronzes in the shadows; but with this chief precaution the paper is handled almost exactly like gelatine P.O.P. The results, however, in both the black and warm tones are far more agreeable, in our judgment, than those of a gelatine paper. Our readers who would turn out a higher grade of work should give "Valento" a trial. Price per two-sheet tube, 2s. 6d.; per quire of 24 sheets, 22s. 6d.; per box of 144 pieces, 6×4¼, 9s. 6d.

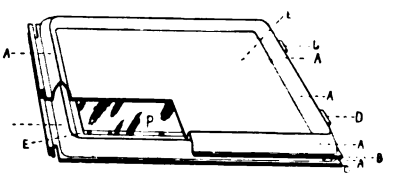
Digitized by Google

Developer without Weighing.—Dissolve as much of a light brown powder as will stand on a halfpenny piece in an ounce of water and you have a normal developer. Some plates may need the addition of a drop or two of 10 per cent. bromide solution, but some—the better ones—develop clearly without it. The brown powder is "Eredal"—hydroquinone with sulphite, etc., in the dry form. "Ready for use" is the seductive description on the label. It certainly is most convenient in use, and it behaves, in our experience, as a hydroquinone developer should. We have used our sample for plates, lantern slides and bromide papers, and we have found that the developer is none the less effective for reaching us all ready for solution. Eredal costs 1s. 6d. per oz., post free, from H. Edmund & Co., Ezra Buildings, Columbia Road, London.

Canister Pyro-Soda.—Messrs. Houghtons, Ltd., 88 and 89 High Holborn, W.C., have issued pyro-soda and pyro-metol in convenient and permanent form, all ready for making up without weighing of chemicals. The formulæ are those of the Imperial Dry Plate Co., but may be used with practically all the plates on the market. Pyro-soda is a developer specially suited for time exposures, whereas pyro-metol is a first-rate method of treating plates which have had very brief exposures in the hand camera, as readers of Mr. Kilbey's articles have doubtless noted. We have found the developers as made up by Messrs. Houghtons to answer excellently, and the price, 1s. 3d. to make 40 oz., ought not to offend the most economical.

Art Mounting Papers.—The selection of art papers which our readers have seen month by month in covers of *The Photogram* has naturally induced many of them to apply to the makers, Messrs. Lindenmeyr. This firm, however, does a strictly wholesale business and executes orders only from houses purchasing the papers for re-sale. The most important of these firms is the Æsthetique Mount Co. of St. Martins, Leicester, who stock all the Lindenmeyr papers and who issue sample packets of numbered papers in several sizes. Our readers who fall in love with any choice mounting paper on the exhibition walls may be glad to note that they can obtain it from the Æsthetique Co.

Daylight Changing and Penny Plates.—Messrs. R. & J. Beck, of 68 Cornhill, E.C., threaten to inaugurate a new era in dry-plate photography. They have invented a new system of daylight plate-changing which is adaptable to the ordinary magazine hand camera. They call it the "Dai Cornex" system. The mainspring of the system is the sheath in which the plate is carried. The Dai Cornex sheath is provided with a channel or grove round its edge, so that one sheath laid on another protects the enclosed plate from light, and a pile of the sheaths to any number can be handled in daylight without injury to the plates, provided an extra sheath is applied to protect the foremost plate. A



Two Dai Cornex Sheaths.

Dai Cornex camera is no different from any other magazine camera except that you can insert your pack of sheaths in daylight and afterwards remove in daylight when all have been exposed. Messrs. Beck may well describe this as a great "achievement in hand-camera construction," and we must congratulate them on the extremely simple solution of a practical problem. Theirs is not the first attempt at solution by any means, but it is the first we have noticed which seems commercially and technically practicable. There are other refinements of Dai Cornex which we have omitted from the above brief description, but these and particulars of the cameras will be found in the Dai Cornex book which Messrs. Beck send free on application.

The Camera Construction Co., not long ago removed from Holborn to a new and well-equipped factory in Durham Grove, Morning Lane, Hackney, N., is one of those firms in the photographic trade whose name is rarely heard on the lips of the amateur or even the dealer. Because they work largely for "the trade," they miss the fame that belongs to the plate-maker or distributor. They are none the less very actively engaged in putting out printing frames, draining racks, and other woodwork for photographers by the hundred or thousand gross. They are also builders of complete cameras, and one new instrument which we saw in its model stage is destined, we are bound to think, for great popularity. The firm consists of W. G. Grubb and Albert Nixon, and it may say something for the technical conduct of the business when we mention that the former is an associate of the Royal School of Mines, and his partner a B.Sc. of London. The company is one to which we have frequently entrusted small commissions in the way of camera construction, and it is one also which is open to consider inventions in the nature of wood-made articles of photographic use.

Cubrome is a preparation supplied by H. Edmund & Co., Ezra Buildings, Columbia Road, London, E. Its name almost discloses its chemical composition, and no doubt many readers will at once be able to confirm the makers' claims for it as—

an intensifier
a reducer } *of negatives and bromide prints,*
a toning agent—for bromides,
non-poisonous—within the meaning of the Act.

Cubrome we find to be a convenient solution to have at hand for these and, indeed, other purposes, and for bromides especially it comes just at the right time—when printers by this process are wanting to obtain sepia tones. The makers' instructions are a guide to the process sufficient for those who have not Mr. Somerville's new book, "Toning Bromides," first issued by our own publishers. A gold-toning process for bromides is given by the makers as follows:—Bleach the print in Cubrome and then tone in the following bath:—

Gold chloride, 2 gr.; ammonium sulphocyanide, 7 gr.; 5% solution of ammonia ·880, 1 dr.; water, 2 oz.

In making up the above bath, add the gold to the sulphocyanide (dissolved in a little water), and make up to 2 oz. with water, and then add the ammonia slowly, stirring the while, when the solution should become colorless. Toning takes 15 to 20 minutes, and the result is a purple to a purple-black color.

The price of Cubrome is 1s. 6d. per 8 oz. bottle, post free, and the solution can be used over and over again.

Geka Chemicals.—The many excellent preparations of Dr. G. Krebs, Offenbach-on-Main, have hitherto become known among English users under the "Axe" trade mark, but in future they will be issued as Geka specialties. The house responsible for the change is Messrs. A. E. Staley & Co., 19 Thavies Inn, London, E.C. A full stock of the Geka products is kept here, the new English catalogue is ready, and will be sent free, and a sample case of some twenty cartridges is offered post free at 5s. 6d. to enable photographers to make the acquaintance of the Geka materials in the manner which the makers most desire—that of practical trial. The catalogue is worth getting, for it manages to intersperse useful information among its announcements: which latter, we note with pleasure, are couched in language at once moderate and convincing. Every preparation is not the greatest and grandest discovery of the age, but the properties of the cartridge or powder are baldly stated. We have been familiar with the products for some years past, and we know them to be carefully compounded and reliable in their action. Some one or two are new to us, and these we mention separately. Doubtless there are others to follow; but meanwhile let our readers obtain the Geka catalogue from Messrs. Staley. They will find there, for example:—

How to photograph a group by flashlight.
How to enlarge by night without condenser.
The remedy for hard negatives.
How to print P.O.P. at night.

A pamphlet, "Flashlight Photography without Apparatus," can also be obtained free.

Three Geka Cartridges.—Among the new chemicals from Messrs. Staley (see "Geka Chemicals" above) we have found three which we had not used before. Each is hermetically sealed in a glass tube, each makes about 6 oz. of developer, and each costs 1s. 9d. per box of five cartridges. No 1 of this trio is the "Geka Brilliant," which dissolves to a single-solution developer of remarkable cleanness and power in developing a number of exposures. "Geka film developer" is specially suited for roll films, as it acts quickly and without stain, and there is no difficulty in getting density. "Carcinal Geka," the third newcomer, is for gaslight and bromide papers and for plates. As is necessary for gaslight prints, its action is very quick, the color of the image is a good black, and there is no veiling of the lights.

The cleanness with which the powders dissolve is one proof of the purity of the materials and the care expended on their manufacture. Each being made up in a cartridge there is no weighing: the lazy man is encouraged in his evil ways.

Digitized by Google

A New Gaslight Paper.—Under the name of "Pala Paper," there is now supplied, by Messrs. Moll & Jonas, of 27 Chancery Lane, E.C., a new gaslight paper which has certain claims to special mention. It is supplied in six grades, four of which are on delightfully thin paper. These are the "matt smooth" papers. There is also a glossy thin paper and a thick cardboard smooth. Of the four matt papers, one is white, the others, blue, pink, and antique: this latter being an especially pleasing tint and texture, adapted to the warm tones which can be readily obtained on Pala paper. In development and fixing, Pala paper shows remarkable freedom from stain. We have forced development of prints upon it to an extent which would have completely ruined some papers from brown stain, but without trace of discoloration. In the fixing bath also the paper is less liable to stain if, by chance, it is not completely covered by the solution.

By increasing the exposure and adding potassium bromide, warm tones, from sepia to orange, can be obtained, and the effects are of exceptional richness, resembling carbon. The tinted papers are specially suited for these warm tones, whilst the untinted papers, thick and thin, give beautiful cold black tones resembling platinum. Pala is issued at prices uniform with other gaslight papers.

New Business, Business Changes, etc.—*Edward Baily*, 9 Queen Street, Ramsgate, has opened a branch depôt at the New Pavilion, where he has also a dark room.

E. R. Boddy has opened a new photographic stores at 10 Victoria Parade, London Road, Norbury, S.E.

Rajar.—The Brooks-Watson Daylight Camera Co. have now made their new London offices at 119 High Holborn the headquarters of their business.

New Lenses for Old.—Messrs. R. & J. Beck announce a scheme under which their new Unofocal anastigmat can be obtained in exchange for the photographer's present lens. Circular setting forth details is sent free.

In the July "Ensign" Film Competition the names of the prize-winners are:—£10, W. E. Brown; £5, J. Daly; £1, W. Bulmer, W. Scott, E. Latter, Mrs. Walker, E. Staley. Messrs. Houghtons. Ltd., will send particulars of the competition on application.

Photographic Industries, Ltd., is a new company registered with £50,000 capital to enter upon the manufacture of films. The technical members of the firm are Dr. J. Findlay and Major B. H. Gunston, and they act as managing directors. The offices are 25 Victoria Street, S.W.

The Eastman Kodak Company of New Jersey has paid the usual quarterly dividends of 1½ per cent. (being at the rate of 6 per cent. per annum) upon the outstanding preferred stock, and of 2½ per cent. (being at the rate of 10 per cent. per annum) upon the outstanding common stock.

A Medal has been awarded by the Franklin Institute, Philadelphia, to A. J. M'Curdy for his invention of the Kodak developing machine. The Science and Arts Committee commend "the excellent performance and certainty of action of the machine."

As an example of the work of the machine we may mention the name of Mr. Percy Phillips, a war correspondent sent out by *The Daily Express*. He has recently returned from the seat of war, and has brought back about 900 films taken with the No. 3A folding pocket Kodak. All of these were developed in the Kodak developing machine, and some 65 reproductions from these negatives have already appeared in *The Illustrated London News*.

Rotary Expansion.—The Rotary Photographic Co., Ltd., notify us that the growth of their business is forcing them to evacuate their premises at 14 New Union Street, Moorfields, and that they are now in process of removal to 12 New Union Street, precisely opposite to the quarters which they have found insufficient. No. 12 is one of the large and solemn if not ornamental City blocks, and the Rotary Company are occupying the whole of it—seven floors. Concurrently with these expansions, a second floor is being placed on the company's factory at West Drayton. These changes naturally tax the energies of the staffs in both places, and while the company experiences the satisfactory feeling that it is the favor extended to its manufactures which is the *raison d'être* of these enlargements, it begs with the same breath for tolerance of any delays which may occur in correspondence during this period.

The Year's Pictorial Photography.

"It is a treasure house of beautiful work, a mine of interest to everybody, and deserves support as 'an incentive and an inspiration to every true lover of photography.'" So says the *Halifax Guardian* in reviewing *Photograms of 1901*. *Photograms of 1904* now in the press.

BE BRIEF!—*We reserve the right of condensing all correspondence, but undertake to leave the meaning intact.*

Personalities barred. Whenever a man's opinions are attacked, with mention of the man's name, we wait until a proof can be sent, and the attack and reply published together.

Anonymous letters are strongly objected to, and those which are not ACCOMPANIED *by name and address of writer, for our own information, go into the W.P.B.*

For Charity's Sake.

At the time of going to press a number of further letters and notices are reaching us in reference to H. S. W.'s article in The Photogram *for September.*

The following extracts from letters received at this office and from articles in the Photographic press show the interest with which the suggestions of last month have been received.

"*An Old Photographer*," from whose long letter the following extracts are made, was a pensioner of the Benevolent; and his case, simply stated in the photographic journals two years ago, brought a response which, doled out in the small sums that are sufficient for his wants, has kept him in comfort, and will continue to do so for some time to come. This case shows that photographers *are* ready to contribute when definite appeal is made. Why, then, should they not support the efforts of a properly organised body! The Old Photographer writes:—

"As an old photographer who has long been an invalid, and who has had to pass through much unlooked for trouble, it will be easily understood how I can feel for others who need help and sympathy, and I sincerely hope real good may come from your very wise suggestions.

"Eight years ago I had a long and trying illness, and found I was to be an invalid for the rest of my days. In less than two years I was in great trouble—apart from my illness. The thought came to me, 'Write to the Photographers' Benevolent Society.' I forwarded particulars of my case and enclosed some testimonies from those who had long known me; I shall never forget reading the first letter the secretary wrote me stating that the committee had granted me five shillings a week and enclosing the first instalment.

"Two years before this five shillings would not have been much to me, but now it meant a great deal and I was truly thankful. Then in a few months came the news that only three shillings could be allowed me, and then in a short time this fund that had been a real help to me closed, and the future had a dark lookout for me. Then, sir, came your very timely and unlooked for appeal in my behalf, and so for past year and eight months, kind friends, through you, have helped and cheered me each week in a way I never expected."

The Professional Photographers' Association and The Photographic Trade Association should take up the matter, says Mr. T. K. Grant, who continues:—"These two do, or ought to, embrace photographers generally, and any part taken by the R.P.S. should be in the same manner as that of the Affiliation of Photographic Societies. Under such auspices I see no reason why the photographic fraternity should not combine with equal success to that which has been attained by many kindred crafts."

Mr. Archer Clarke writes: "Surely the Photographic Convention Fund could be made available for this purpose. Is not £100 balance sufficient for all purposes for the Photo Convention?"

"An endeavor to organise some form of friendly society," writes Mr. Douglas English, "might fairly look to the R.P.S. for both moral and financial support at its inception."

J. T. Ashby thinks it is not only "possible for the R.P.S. to move in the matter," but that it is incumbent upon it to do so. "To me it seems no less than a moral obligation that a society constituted as a central authority for the promotion of the interests of photography and all that is implied in that term, should take the lead in any movement having

Digitized by Google

for its object the benefit of those most intimately concerned in photography as a profession."

"The initiative must be taken by professional photographers themselves," is the verdict of *The British Journal of Photography*, on reviewing the history of the Benevolent Association. "Found your Benevolent Fund by all means, yet *let it be first of all stipulated that the idea secures the immediate practical support of those on whose behalf it is to be exploited.*"

The Photographic News asks, "Why should not the Photographic Club, which, from all accounts, is in a moribund way, devote some of its funds to the same purpose? The Photographic Convention has a nest egg of £450. Surely the members might utilise, say, £50 to make a beginning. How many photographic societies hold exhibitions now? The number is simply appalling, and many make good profits. Why not devote, say, 5 per cent. of the profits to the same purpose? It can hurt no one, and can do good.

"We know, of course, from past experience the difficulty of getting honorary officials to tackle such a job. You may get the men to lend their names, but few will do any work; therefore this is why the P.P.A. should tackle it, and enforce a subscription to the furtherance of this end. It merely wants energy and push on someone's part, and plenty of publicity, to attain the desired end. Above all things, publicity, full reports of meetings and cases, and the action taken, and the thing is done."

The Daily News (Mr. Harold Hood) says:—"It seems to me that the kind of fund likely to succeed most is one in which the whole profession compels itself to interest as a duty, and whose funds are built up by very small contributions paid in with the greatest regularity rather than by larger subscriptions given erratically, and without regard to rule."

Reversal—A Snapshot which gave a Positive.

Mr. William Gill of Colchester has sent us the result of an exposure by an amateur friend of his, the occurrence in

which of a moving figure debars any explanation involving gross over-exposure. The facts as stated are:—Plate, Barnet special rapid; stop, *f*/11; shutter, not reliable, but about $\frac{1}{10}$ of a second. The exposure was made one bright morning at 9 a.m. The developer was metol-hydroquinone, Barnet formula. The image came up as an ordinary negative (over-exposed a little), while in the developer: after fixing it was found to be a positive.

Mr. Alfred Watkins, to whom we showed the above reproduction and note, writes:—"Mr. Gill's example is interesting, but as a clue to the cause might I ask whether the plate had been kept long after exposure and before development? Some years ago I took out a supply of Edwards Inst. Iso Films to Switzerland, and they developed with normal results on my return, the bulk being snapshots. More than two years afterwards I found a packet of these films exposed but not developed. I developed them in pyro-soda (no bromide). They came up much slower than usual, and on fixing I found one perfect positive (snapshot and thin), several part positive and part negative, and several bad negatives. Another experience was that I made two exposures on a Kodak film, did not develop, but twelve months later exposed the remainder of the film, and developed all together. The old exposures took much longer to appear than the new exposures, and the image, although not reversed, had the same appearance as the poor negatives in my previous experience. The new exposures on the same roll of film were bright and normal. In this case the exposed image had deteriorated in some way, but the emulsion had not."

A Dark Room at Genoa.

DEAR SIRS AND MADAM,—I trust you will add to your "Dark Room List" the Hotel Smith, Genoa. The proprietors of this excellent little hotel have just opened a small but comfortable dark room on the ground floor, near the entrance. It is lit by electricity. Dark rooms are not easy to find in Genoa, and none so conveniently situated as this one.—I am, yours faithfully,

ERNEST G. BOON.

Italy.

Permits.—A. Bedding kindly writes us that the following fees include admission and permission to photograph:—Tewkesbury Abbey, 1s. per day; Deerhurst, 2s., and 6d. Abbedore, 5s.; Chepstow Castle, 2s. 6d., and 6d.

Next Month

Photography in Winter will form a prominent feature of *The Photogram*, wherein the subject will be treated from a practical standpoint, and methods and suggestions given for the use of the camera during the winter season. This November issue will be a special one, which readers can order for their friends.

PRINCIPAL CONTENTS.

Mounting the Exhibition Print. By Fredk. H. Evans.

"At Home" Portraiture.

Critical Appreciations.—J. M. Whitehead and "Concentrated Landscape."

Advanced Hand-Camera Work. By Walter Kilbey.

Six-Plate Promenades.—VI. From Lambeth to Hyde Park.

The Portrait and the Studio.—VIII. Misses Garstin and Antrobus.

A Notable Scottish Exhibitor.

Figures-in-Landscape Competition.

Cloud Photography. Competition No. 9.

A Novel Signal for Lanternists.

What's What.

Forthcoming Exhibitions and Competitions.

Trade. Correspondence.

The Process Photogram

contains the whole of *The Photogram plus* the following articles and notes relating to photo-mechanical processes:—

Dry *versus* Wet Light-Filters.

An Etcher's Note-Book. By Arthur White.

The Bolt Court School.

Three-Line Half-Tone: The Schulze Screen.

Four-Color and New Electros.

Foreign Notes.

The High-Light Process.

Current Topics.

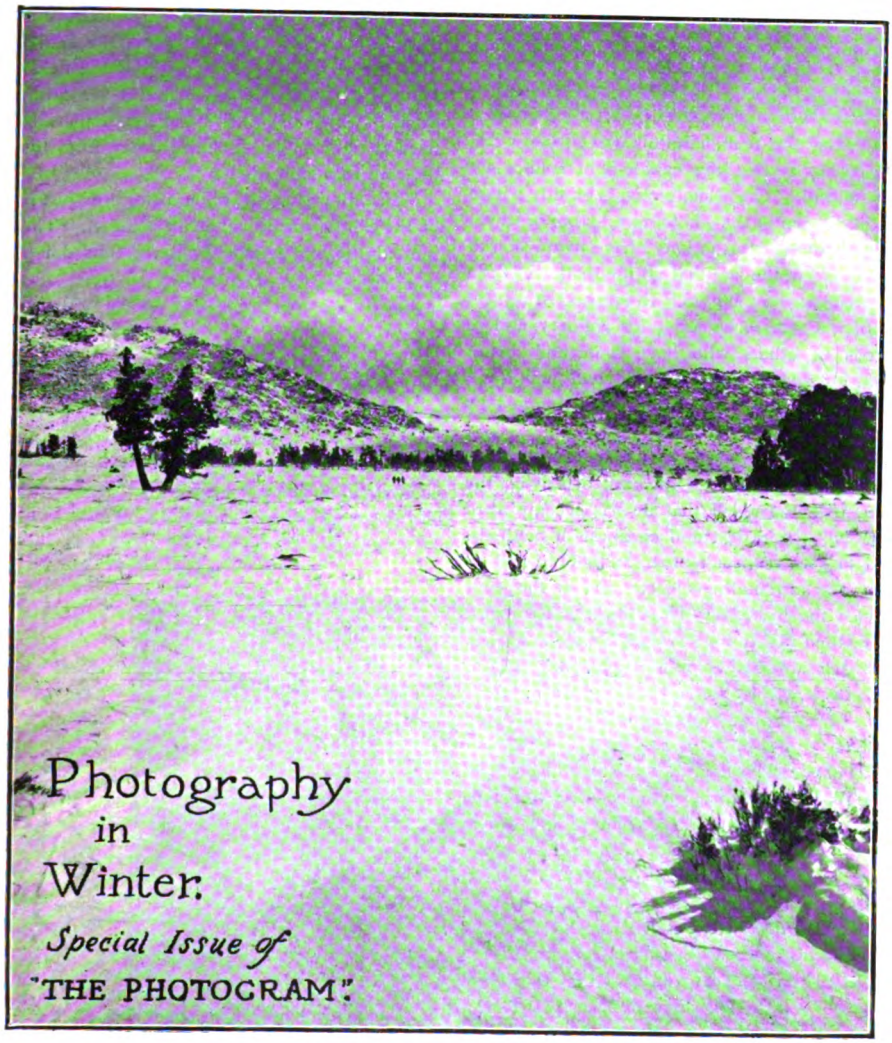
Digitized by Google

THE PHOTOGRAM

VOL. XI. NOVEMBER, 1904. No. 131.

Editors.
H. SNOWDEN WARD.
CATHARINE WEED WARD.
GEORGE E. BROWN, F.I.C.

COPYRIGHT.—*This Magazine as a whole, with its contents, both literary and pictorial, is copyright; and the copyright is registered in Great Britain and the countries forming the Copyright Convention. Our contemporaries are very welcome to quote from our pages (with acknowledgment), but we propose to protect ourselves and our advertisers against piracy.*



Near the Pine Lake, Tasmania.
By Sparling & Son, Launceston.

Digitized by Google

INDOOR WINTER WORK.

CANDLE-LIGHT EFFECTS.

The Methods of Newton Gibson.*

EDITORIAL NOTE.

Among the special inducements to winter photography indoors, we are fortunate in being able to include the first public account of the method used by Mr. Newton Gibson in making his remarkable candle-light studies. To this we add some other illustrations and notes by Mr. Ernest Law, who was led to this branch of work by the preliminary account of Mr. Gibson's work published in The Photogram *of March 1904.*

Of course the real charm of Mr. Gibson's discovery is that the candle-light studies are faithful. The illumination is exactly where it is seen in the photogram, proof of which —even without the explanations I have permission to give—is found in the fact that all the shadows of the objects *diverge* from the light. In every other respect Mr. Gibson's accessories are quite ordinary, and in the hands of others who have more and better facilities for surroundings, figures and makes-up, the possibilities and the effects to be obtained by this simple lamp are illimitable.

Mr. Gibson conceived the idea some two or three years ago, and set himself the task of solving the problem, with the result that he has accomplished his object by the easiest and cheapest of methods. He had to give realism to the candle-light and its glow on the surrounding objects, and at the same time avoid the harshness of the ordinary flashlight. By his method this is done in such a way that even if the models are *looking* at the light they are unaffected by it. There is no staring or muscular rigidity. They remain quite natural in feature and expression.

This is obtained by a proper mixture of daylight with the illuminant, which gives the effective profile lighting to be seen in the specimens reproduced in this and *The Photogram* for March last. An *ordinary room* is used in full daylight—the blind being drawn if there is sunlight that is too strong, and left up under ordinary conditions. The window of Mr. Gibson's room faces east, and his models are about ten to thirteen feet away, so that there is a diffused light which relieves what would otherwise be hard or impenetrable shadows.

Mr. Gibson's first trials were crude, and not so effective as his later experiments. Nevertheless many of his studies, which have puzzled thousands of photographers, were obtained with the simple little device explained in figure A.

As will be seen, this was nothing more than a piece of cardboard cut out to cover the flame of the lighted candle. It was held in position by a piece of wire, bent above so that it could be held by the photographer, who remained out of the field of the camera. A small slit was made in the card at the back, in which a short strip of magnesium ribbon was fixed at right angles, pointing away from the lens, the card forming a shield.

When all was ready, this was lowered just in front of the candle's flame and concealing it. The latter ignited the magnesium for itself, thus doing away

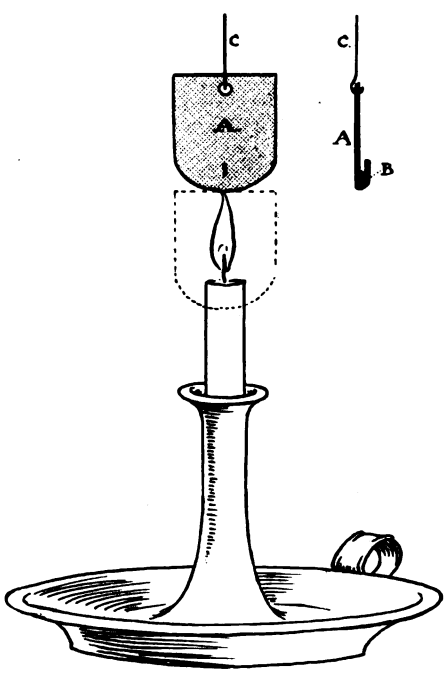


Diagram A.

A. Piece of cardboard or tin, painted black.
B. Magnesium ribbon inserted in slit or hook, and projecting at right angles from opposite side of the shield to the lens.
C. Suspending wire.

* The present article is the first account of practical methods, as communicated by Mr. Gibson to Mr. Percy Brotherton, expressly for this number. The letter of Mr. Sidney C. Young, deposited with us on 3rd March, appears on page 318.

Digitized by Google

with the necessity for the use of tapers or matches. There was the flash illuminating the objects around in exact relation and value to the position of the candle. Then the card was raised sufficiently high

"A PIPE ON THE QUIET." *By Newton Gibson.*

"THE YOUNG ARTIST." *By Newton Gibson.*

and long for the wick flame to make its impression on the sensitive film. The exposure, of course, was made at the psychological moment—that was, just as the magnesium became ignited, continuing until the card had been raised to expose the candle flame. The duration of the whole exposure was about two or three seconds.

In practice with the card, however, Mr. Gibson found several defects. Firstly, his cards were often consumed by the magnesium setting fire to them. Accordingly he cut out a similar shield in tin, which he turned at the bottom in the fashion of a rail picture hook as a clip for the magnesium ribbon. With this simple arrangement many successes were obtained, but, as in the case of the card, there was a tendency for the flash to "blow" outwards too far, causing halation, whilst there was also the difficulty that the shield, held by wire only, was not stable enough. When it was being manipulated its slight vibrations caused the candle flame to flicker, and thus be unnatural and blurred.

To overcome this, Mr. Gibson, after many experiments involving far more serious thought and trouble than the very simple evolution would indicate, decided upon the following method, which he has since used with unvarying success.

The sketch I give sufficiently explains the method of enlargement upon the initial experiments. Mr. Gibson has a piece of wood, which, to be exact, is two feet six inches long and $1\frac{3}{4}$ inches wide. It is faced, on the side towards the camera, with black velvet. To the top is loosely fastened a long rod as a handle for the operator, so that the light shield itself hangs vertically, whilst its weight prevents any

CANDLE-LIGHT STUDY. *By Newton Gibson.*

Digitized by Google

motion. On the reverse side of the piece of wood is fastened a triangular chimney made of tin. This in reality may be a V-shaped piece of tin tacked on to the wood, and the bottom of this chimney is about an inch and a half from the lower extremity of the rod. Immediately below the chimney is a small clip for the magnesium ribbon, which juts out at right angles as before.

In effect, the object desired is obtained. As the blackened wood is lowered in front of the candle (to, say, the point indicated by the dotted line in the diagram) the flame fires the ribbon. The chimney, acting as a flue, takes away all the white smoke, and at the same time keeps the candle flame conical and natural. Then the rod is sufficiently raised to expose the light of the candle, the lens being then capped or the shutter released. It is a two-handed job, or two persons are employed in the manipulation of the lamp and the uncovering of the lens. As care is taken to place the light before the *darkest portion of the background*, the black rod is absolutely invisible.

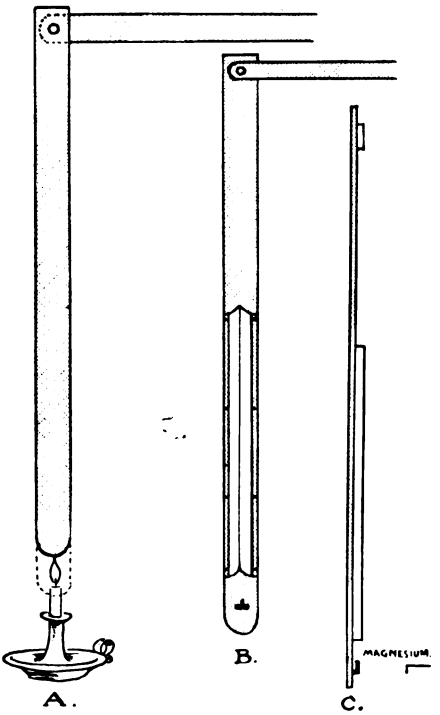


Diagram B.

A. Rod with face covered with black velvet, lowered between the candle flame and the lens.
B. Back view of ditto, showing triangular chimney and clip for flash ribbon.
C. Side elevation, showing clip and how magnesium is held at right angles.

A little practice will soon decide the small details. Mr. Gibson finds that an ordinary room is well adapted for giving the right quantity of daylight, but this can easily be determined by demonstration. He uses *only an inch* of magnesium ribbon, which gives a second's flash, which, coupled with the daylight, does not affect the model in the slightest degree. Another *second* suffices to gain a perfect record of the candle flame, so that the exposure is of two seconds' duration. This is an important consideration where posed figures are concerned. He has found, by various experiments, I may add, that the *triangular* chimney acts best, and behind the models he places an ordinary screen, or dark covering.

Mr. Gibson finds that the "lamp" illuminates a distance of five or six feet—*i.e.* with a two to three feet radius. This leaves to the discretion of the worker great freedom in the arranging of his objects, which may be subdued or emphasised, not by focussing sharp or "fuzzy," but by placing them less or more in the field of lighting. In ordinary use the inventor employs extra-rapid plates, of no particular make, and works with a stop of *f*/11 or *f*/16.

Up to the present he has *not* used backed plates, the reason for this being that he prefers to see the slight halo round the flame of the candle, considering this more natural than its absence. Mr. Gibson develops with amidol, 5 grains to the ounce of water, with sulphite in proportion, and he aims to keep his negatives very thin and soft, so that the more brightly-lit portions are in no way dense, whilst the shadows, thanks to the daylight, retain detail. Focussing is done by the ordinary candle-light, and practice soon teaches the requisite admixture of daylight.

It will thus be seen that Mr. Gibson's apparatus combines simplicity and cheapness with effectiveness. Anyone can make the lamp for a *few coppers*, and have at hand a delightful addition to their photographic hobby. It is certainly attractive. It has pictorial possibilities equal to the capabilities of the most artistic worker, and for pictorial post cards alone it is certain to be soon directly and extensively employed. Quite a new phase of photography has been opened out; but it remains with unassuming Mr. Newton Gibson that he it was who discovered the secret, simple though it is. It is even more to his credit that he has given his photographic brethren insight into his methods. He is the quietest of men, and unfortunately not endowed with a robust constitution, but it has given him genuine pleasure to be of service to "the cause," and it may be that he has one or two further useful ideas to give us.

PERCY BROTHERTON.

Digitized by Google

THE GLASS-BLOWER. *By Ernest Law.*

FIRESIDE AND LAMPLIGHT STUDIES.

By ERNEST LAW.

Continuing the interest of Mr. Newton Gibson's method, the following notes on work of a similar description done entirely by artificial light should be studied.—EDS.

My object is to explain how one or two home subjects (the illustrations accompanying this article) were arranged and taken, and to leave it to the ingenuity of my readers to work out other subjects of a similar character; for each individual picture of this kind needs a considerable amount of care and forethought and varying devices to overcome halation and false lighting.

All the accompanying pictures were taken in the ordinary rooms of my house, and in *stereoscopic* form, upon Imperial Sovereign plates and at a lens-aperture of *f*/6.

Before I go further I beg leave to stray from my subject for a moment—to strongly champion the stereoscopic form of photographic print. After my fifteen or twenty years of photographic work, it passes my understanding that ninety-nine out of a hundred amateur photographers never think of doing stereoscopic work, since one stereoscopic picture is (in my opinion) worth at least five ordinary flat pictures—and possesses a much more permanent interest. A great number of ordinary holiday views are practically lost or forgotten when the new year comes, whereas stereoscopic views will entertain people years after they are taken, and their charm of solid reality is ever fresh.

These pictures—having been taken for the stereoscope—do not reproduce in print so well as if they had been specially prepared, because a soft negative is almost a *sine quâ non* for good stereoscopic work.

"Fireside Chat" could not, of course, be taken by firelight alone, and in fact in most indoor night pictures resort must be had to magnesium. A small tray of magnesium flash-powder was placed in the hearth as near as possible to the fire itself, and in such a position that the flash should be entirely screened by the lady's dress. The male figure himself assisted in the plot by lighting a fuse attached to the magnesium, while a friend burnt a short length (about three inches) of magnesium ribbon in the room—out of view of the lenses—in order to give rotundity to the figures. The room was lighted by ordinary gaslight at the time, but this would count for little, as the length of exposure was limited by the burning of the magnesium ribbon—probably ten or fifteen seconds. The effect of the supposed firelight is considerably enhanced by staining the prints red or orange-red.

"Reading *Punch*" is a somewhat simpler matter to produce, provided you have a model who will smile in a natural manner (and I think that this will be conceded to my model) for the prolonged period of 1¾ minutes. In taking this negative I feel that no credit belongs to me, but all to the sitter. The only light used was that of the incandescent gas lamp which forms part of the picture, and an oil lamp on the floor to slightly illuminate the lower portion of the figure. During the greater part of the exposure I intercepted the direct light of the

"FIRESIDE CHAT." *By Ernest Law.*

Digitized by Google

"READING 'PUNCH.'" *By Ernest Law.*

lamp with a small screen of brown paper mounted on wire of sufficient length to enable me to keep out of the picture. This screen was kept in motion to avoid hard lines, and removed during the last few seconds of the exposure.

The third illustration presents greater difficulties, and it and another cost me some six or seven hours' hard work in order to reduce everything to the simplest form, and to arrange the camera and a suitable background in a somewhat small room, with improvised material. Lest my readers should be deterred from attempting similar subjects, it is well to remark that a good part of this time was spent in devising an arrangement by which the necessary magnesium light should not appear in the picture, and those who follow my instructions will be saved the greater portion of the trouble I experienced.

Having arranged your subject, and having placed a few simple articles in addition to the principal figure or figures in such positions as will express clearly that the whole of the lighting is central—*i.e.* (apparently) proceeding from the candle—make a screen in the following manner (Note.—As this may possibly occupy an hour, the model may, during the process, be allowed to "get down"):—Take a piece of cardboard—say, two feet long by ten or twelve inches wide, bend it lengthways into a section of a cylinder, and hold it in that position if necessary by fine wire. Glue or otherwise fasten on the concave side—about one inch from the bottom—a small piece of split wood or cork to hold the requisite magnesium ribbon, and blacken the convex side of the card.

Place the candle in position and suspend the screen by black thread from above, in such a manner that the bottom edge of the centre of the screen exactly covers the lighted wick of the candle, but not the wax. This operation, of course, requires nice adjustment, and should be viewed through the camera itself. The candle having been extinguished and removed, one inch of magnesium ribbon is fixed so that it will project into the top of the flame, and the lighted candle is finally placed in its proper position by a third person (or, as in my picture, by the model), where it will ignite the magnesium. At this point the lenses are uncovered, and immediately the magnesium has burnt out, the screen is quietly removed so as to avoid causing a draught, and an exposure of three or four seconds given to the candle flame. It is desirable to have as plain and dark a background as possible to prevent the outline of the screen being revealed; and the taller the screen used, the more effective will it be in hiding the white smoke of the magnesium, which is apt to betray the top of the screen.

It is needless to say that in all these cases the sitters should remain still throughout the whole exposure, and it will be well to warn the model that the *séance* is not concluded when the main light is extinguished.

The chief difficulty to be guarded against is reflection from any polished surface, such as the glass of windows or pictures in the background, and these are somewhat apt to be overlooked in the comparative darkness of candle-light, only becoming apparent to the anxious eye of the operator when the magnesium lights up and it is too late.

PORTRAITS BY FLASHLIGHT.

No form of winter photography offers quite as many temptations as flashlight portraiture. Done in the comfort of one's own home and in the leisure of the evening, it also perpetuates scenes and faces which we hold dearest of any. We not only amuse ourselves, but we can gratify distant friends and relations in a way with which no other form of message can compare. For such reasons as these, flashlight work claims a prominent place in our winter programme, and the pity is that often the technical results of beginners are so poor as to rob the pictures of the charm and interest which should properly be theirs. This comes from a misunderstanding of a few elementary rules of flashlight, which it is now the writer's aim to make clear.

Sources of Flashlight.—The means of obtaining the bright light for rapid portraiture is the metal magnesium, burnt either by blowing the fine powder through a flame or by inflaming a mixture of that powder and an oxidising body, such as potassium

Digitized by Google

THE SOUVENIR. *By J. C. Strauss, St. Louis.*
(See "Lamplight Effects," p. 294.)

nitrate or perchlorate. This latter form—the flash powder—is employed in many different ways. The powder can be spread on a tray and ignited by an electric spark or a percussion cap. This is a very efficient form of lamp, and one such on the market, the "Ideal" of Houghton's, Ltd., is about the best lamp which can be had for regular work. The Weiss lamp is also a powder instrument of the same type. Flash-powder is also put up in cartridges, candles, sheets, bags, etc., all giving a powerful light. The drawback to this form of flash is that it is difficult—frequently impossible—to watch the subject and at any moment instantly make the flash. With the lamps—*e.g.* the two burning "powders" just mentioned, and others consuming magnesium only—you can do this, and I need not say how great an advantage it is when arranging the subject and trying for a pleasant expression. When working with cartridges, candles, etc., a fuse is lighted, and in a few seconds ignites the powder. For reasons which will be given directly, it is usually necessary to place the flash out of the reach of the operator at the camera, and therefore the assistance of a friend to light the fuse is almost necessary.

The lamps for magnesium only are fairly numerous, two of the best being the "Todd-Forret" (A. H. Baird, Edinburgh) and the "Electra" (Penrose & Co., London). The flash is made with these lamps by releasing the pressure from a small rubber bulb, the operator holding the clip in his fingers as he watches the sitter.

How to place the Light.—The greatest mistakes in flashlight portraiture are made here. The chief one is to have the light too low down. It should be at least 3 ft. above the head of the sitter. If this brings it dangerously near the ceiling, a tea tray or other protection must be fixed above it, say, resting on a couple of wires running from wall to wall. Another mistake is to use the "naked" flash. It is much better to place a screen between light and sitter so as to give a diffused lighting and avoid those sharp shadows—of the nose on the cheek—which are often noticed in flashlight portraits. The screen may be of thin muslin or cheese-cloth, or of engineers' thin blue tracing paper or cloth, fixed in a light wooden framework—a child's wooden hoop answers well—which is placed a few inches in front of the lamp or powder. A convenient support for the lamp is the household pair of steps, and to this the screen can easily be fitted. If steps of sufficient height cannot be had, a couple of tripods, strapped one on another, will do, or the flash-lamp can be fixed to a walking stick which an assistant must hold.

THE DAUGHTER OF THE HOUSE. *By Catharine Weed Ward.*
(See "Indoor Portraiture," p. 297.)

Digitized by Google

A third mistake is to place the sitter close against the background. There should be a space of 3 or 4 ft. between them. If too near, a shadow of the sitter is thrown on the background, creating a very disturbing effect.

A Portrait.—For ordinary lighting, place your sitter about 3 ft. from the background and the lamp about 3 ft. to one side and 3 ft. in front of him, supporting it at least 3 ft. above his head. On the other side of him, about 4 ft. away, place the reflector, a white cloth thrown over a screen or clothes horse. The reflector should be about 5 ft. high. If the walls of the room are light the reflector will not be needed, but if dark, and especially if of non-actinic red or brown color, it is necessary to balance the strong light from the lamps.

For a Rembrandt effect, the lamp is placed about 3 ft. to one side of the sitter, but, instead of to the front, one foot or so to the rear, being raised above the sitter's head as before. The reflector may be removed altogether if it lights up the shadow side of the sitter too much.

Fireside Pictures.—By placing the lamp or cartridge in the fireplace, many picturesque and striking effects can be obtained. If the view point is such that the interior of the grate can be seen, then a figure must be interposed, but some very natural effects are obtained by taking a sideway position. The lamp must be screened, however, or it will send out a flash into the room, far from realistic.

Strong Effects.—By posing a figure against a curtain or doorway and lighting it behind with the flash, some very beautiful results can be made; care must always be taken that the flash cannot shine directly into the lens.

Groups require the lamp in a lofty position to one side of the camera. In ordinary sitting-rooms a wide-angle lens must be used, therefore avoid the inclusion of objects of furniture close to the camera.

Flashlight with Daylight.—Even more valuable than flashlight alone for portraiture is the magnesium light used along with daylight. A certain proportion of daylight supplies a general illumination and prevents the hard shadows which flashlight alone very easily gives. The magnesium light, on the other hand, can be made to produce the strong lights in the picture, as it can be placed at any point, and can be modified as the circumstances require. Probably no photographer has made more effective use of this compound method of lighting than M. Puyo, and it may be worth while to state the plan on which he works. The model is placed so as to receive an even lighting from the window. In an ordinary room it will be necessary to work at some considerable distance—8 or 10 ft.—to obtain this flat lighting. The shaded magnesium lamp (or lamps) is now placed to provide the characteristic lighting. It may be placed on one side or the other of the sitter, behind, above, or below, between the sitter and the camera. In this last case a piece of glass is placed a short distance above the lamp to stop the flame and the cloud of magnesia. Also when the lamp is behind the sitter it may be necessary to screen it more than is done by the sitter's body: a half cylinder of cardboard will serve for this purpose. Studies of models made up in light transparent fabrics lend themselves admirably to this mode of lighting, and M. Puyo has shown the delicate effects thus obtained with heads and shoulders attired in muslin and *crêpe de chine.* Moreover, this method of lighting frequently shows a plain face as positively pretty, and the photographer who must perforce content himself with a homely model may take heart from the knowledge of lighting exhibited by Mr. W. S. Gilbert's judge, when he stated, in regard to his "elderly ugly daughter," that "she might very well pass for forty-three in the dusk with a light behind her."

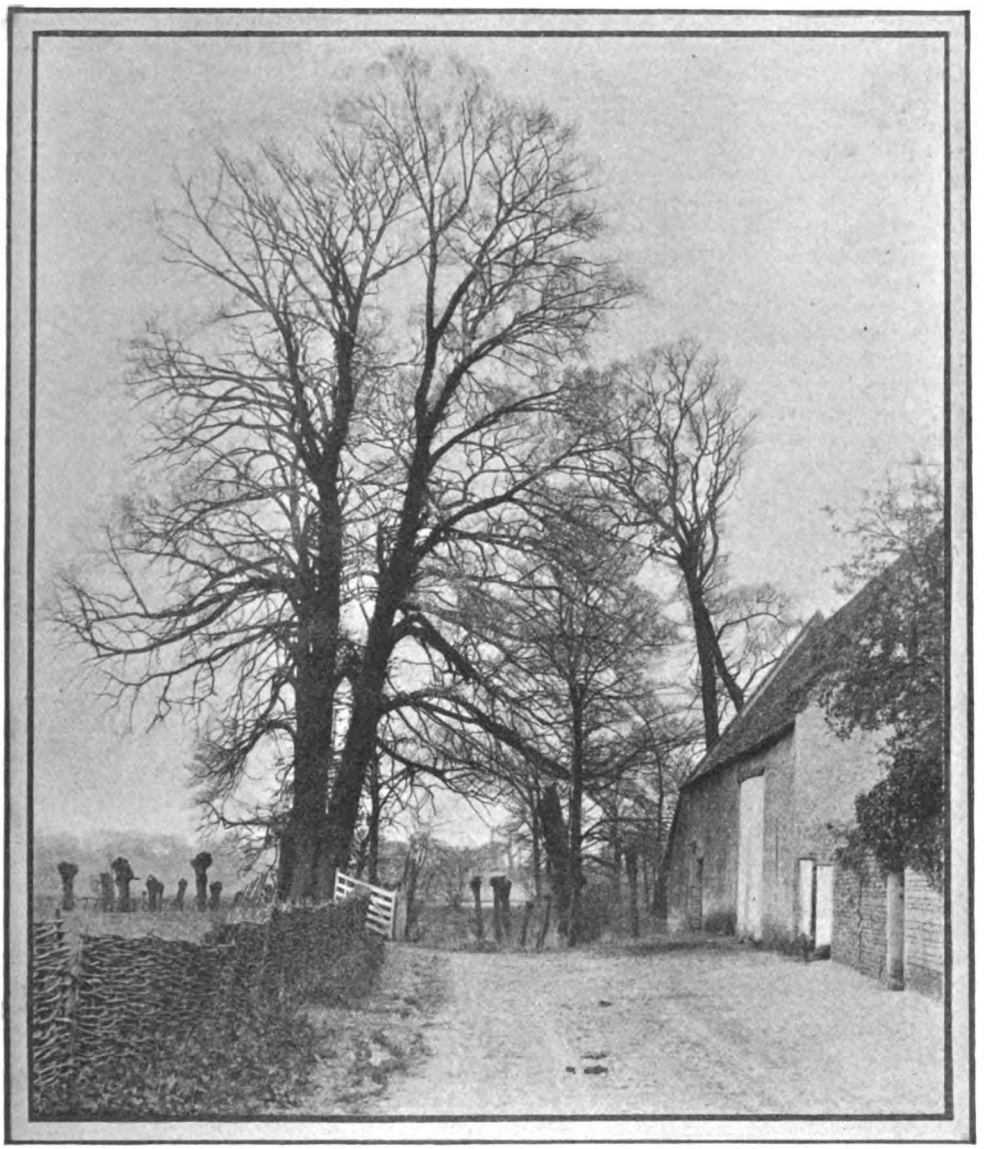
In fixing upon the amount of exposure to daylight we are guided by the effect we wish to obtain. First estimating the correct exposure for daylight alone, we will give, say, one sixth for a night effect; one half for a medium effect, a darkened light with a sombre funereal figure; or three quarters of the time for a soft day effect. In each case the flash is made at the close of the exposure to daylight.

Lamplight Effects.—The charming study by J. C. Strauss of St. Louis represents another effective application of the magnesium light, and although there are no details from Mr. Strauss as to how it was made, we give a method which has proved successful for such work. Daylight and magnesium are used on the lines explained by M. Puyo. A piece of glass is fitted into the upper aperture of the lamp, and several strips of magnesium ribbon a few inches in length suspended below it. This bunch of ribbons is ignited by a fuse, the lens being uncapped as soon as the magnesium ignites. A flashlight is more convenient, but is not so suitable, as it may easily set fire to the lamp shade. If it is to be used it must be let off within a clear glass globe placed inside the lamp shade: the worst of this plan is the bill for cracked globes.

Gaslight and lamplight are by no means beyond the power of the winter worker to turn to his purposes. Mr. Will Cadby, a year or two ago,* showed some specimens of lamplight photography, indoors and out. Portraiture with exposures up to seventeen minutes sounds impossible, but Mr. Cadby

* *The Photogram*, August, 1901, p. 229.

Digitized by Google



APPROACH TO KELMSCOTT MANOR. BY FREDK. H. EVANS.

MOUNTING THE EXHIBITION PRINT.

The printed borders round the picture are to be trimmed off, and the reproduction then mounted according to the scheme shown on another page. The suitable papers are considered in Mr. Evans' article.

Digitized by Google

THE
JOHN CRERAR
LIBRARY

Digitized by Google

Interior by day- and magnesium-light. The latter was burnt near the floor to light the heavy shadows.

reads aloud to his sitters from some interesting—but not laughable—book. His outdoor studies are weird, Japanese-looking renderings of trees and shrubs, white in the lamplight against an intensely dark background.

For exposures by lamp and gaslight, as well indeed for all other photography by artificial light, a rapid isochromatic plate is the best.

INTERIORS BY FLASHLIGHT AND DAYLIGHT.

Much is frequently made of the facility with which interiors of rooms and other small apartments can be photographed at night with the flashlight, but the best way to make negatives of such subjects is to use the magnesium lamp in daylight. The special function of the artificial light is to illumine dark corners and places left in dark shadow by the light from a window. The daylight gives a general, even illumination of objects and prevents the dark shadows which would occur on the sides remote from the lamp, were the latter the only light. In the management of the flashlight H. J. S. Anderton sends the following notes in reference to the two interiors here reproduced.

The lamp generally used is a Todd-Forret, reducing the charge of powder to about three quarters of the full amount, and slowing down the air current so that the time occupied in consuming the magnesium is several seconds. Imperial flashlight plates were used and a R.R. lens of about 5½ in. focal length on a half-plate, the aperture being *f*/13.

"In work of this class it is essential that the light be raised considerably from the ground. The writer made a very efficient stand for the lamp from two old tripods; but with one tripod and a stout blind-lath firmly tied to each leg an equally effective arrangement may be made of sufficient height for all ordinary purposes. Spikes in the feet of the stand will prevent it from slipping. A board should be fixed with a nut and bolt to the tripod head so that the lamp may have room to stand safely.

"It must be remembered that the lamp, when mounted on its support, is not very far from the ceiling of an ordinary room, and that unless precautions are taken it will leave its mark upon the latter. All trouble from this source may be obviated by holding a fire shovel at some distance above the lamp, between it and the ceiling.

"If the lamp is placed high enough, there is no need for a diffusing screen under ordinary circumstances. When possible, always make the exposure in daylight, as the lighting will then be much softer.

Interior by daylight. Exposure, about one minute, at *f*/8 with Busch Aplanat lens on rapid plates. Taken in good light on a September forenoon.

Digitized by Google

Avoid too much contrast in the negatives. Hydroquinone-eikonogen is an excellent developer for the work, and easy to use. These hints, with a little adaptation to individual cases, will serve for most ordinary rooms. Sometimes we have to locate an interior, such as the first here reproduced, where there is ample light to fully expose the plate in three minutes at *f*/13; but while the light walls and curtains would be fully exposed the contrast between them and the darker floor covering and furniture would be painfully apparent upon development. On the other hand, if full exposure be given for the deepest shadows, the lighter parts will suffer from the too continued action of the light.

"In a case of this kind, as full an exposure as possible should be given and the shadows be afterwards lightened by burning magnesium ribbon near the floor. A lamp for burning the ribbon, especially if provided with a reflector, will be a great convenience, as the light may be directed to any part. The 'Minisini' automatic lamp is the one used by the writer, and it works well.

"Should the floor portion still print too dark, paste a strip of semi-transparent paper across the outside of the printing frame over this part of the negative, and make a series of cuts in the paper so as to form a fringe along the top. Put to print in a draught so that the upper edge is kept moving, thus avoiding marks on the print."

Flashlight Cautions.—Never use a prepared flash powder in a "blow-through" lamp, unless you want an explosion.

Never ignite a flash powder with a match or short taper held in the hand, unless you want the skin burned off your fingers. Fix a match in the end of a stick say 18 in. in length.

Always have the magnesium powder bone dry. If it is not so, warm it over a gas flame or in the oven. "Powder-flash" should be dry also, but it should not be dried by heat in this way. *Keep* it dry by storage in a stoppered bottle.

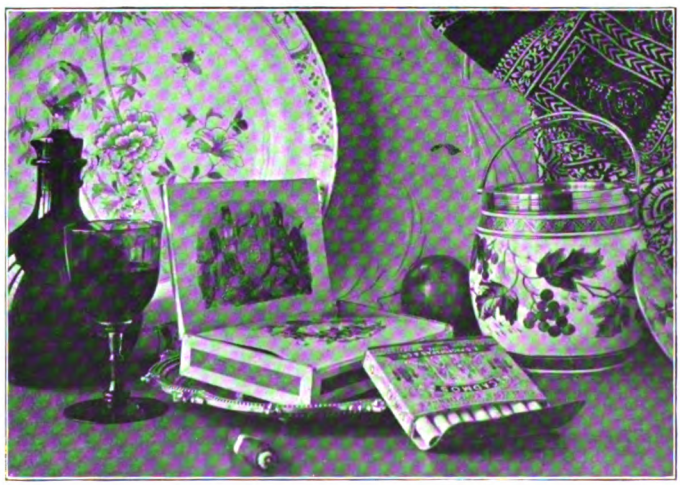
Keep ordinary gaslights going while arranging for and making the flashlight exposure: they will not affect the plate at all, so long as none shines into the lens.

If the image on the focussing screen is dark, a lighted candle can be used for focussing upon, holding it near the sitter's face.

STILL-LIFE STUDIES.

A neglected field of work is this, but one which can be employed in the winter, and there is none which provides better practice in constructive composition. For in still-life studies you don't find your lines and masses ready made; you have to build them, not choose or modify them as in landscape. Consequently your still-life work may be very good or very bad indeed.

The materials are all the better for being as few as possible unless brought together for a special purpose, as in the case of the photogram by E. W. Jackson, here reproduced as a design for an Xmas card. Usually a single pot or vase with a spray of flowers or a few fruits on a silver dish will provide the best subjects. But the photographer can choose from an endless variety of flowers, fruits, vegetables,



CHRISTMAS CHEER. *By E. W. Jackson.*
(Still-life design for a Christmas Card.)

Digitized by Google

and articles of art and *vertu*. The accessories are simple—a flat board on which to place the objects, a background of brown paper, and isochromatic backed plates. Daylight from the window of an ordinary room will answer for the illumination, which can be helped, if need be, by magnesium, as elsewhere explained. Flashlight alone makes possible certain pleasing effects, such as vapor rising from a bowl of punch (really a few burning pastilles placed in the bottom of the bowl), or the curling smoke from an extinguished candle, which, with a skull and a closed book, may form a study signifying the end of all things.

A small stop is generally needed, so that exposures of still-life subjects are not short. With *f*/32 on a winter day you may give several minutes to strongly colored subjects. Under-exposure should be carefully guarded against. The light from the window may be softened by fixing up tissue paper or muslin, and cut down to a small area with pieces of brown paper. In this way we get a soft but concentrated light which is well able to give the relief which these subjects should have.

SILHOUETTES.

This old-fashioned form of portrait can be made very easily with the camera, and though there is no danger of its general revival, an occasional silhouette is welcome in a collection of portraits, and one or two for the walls of their boudoirs will be prized by ladies—even by those without leanings to early-Victorian. To make an orthodox silhouette—as black as you can get it on a white ground—you want a slow plate and a strong developer. Pyro-soda is suitable for the latter, raising the pyro to four or five grains per ounce and the sulphite to thirty or forty. The *modus operandi* in posing the victim is as follows:—A white sheet is stretched evenly about a foot away from a window, being hung from a rod supported by large brackets. On the inner side of the sheet a large table is placed. It must be at least a little higher than the window sill. The model, preferably dressed in dark, now takes his or her seat on the table. The camera is placed with the lens just level with the top of the table—this to cause the feet of the sitter to come out clearly—and exposure made for long enough to give a clear figure on a background of dense deposit. It may be necessary to intensify the negative, for which purpose mercury followed by ammonia is the best formula, but be sure that the figure is clear glass before intensifying.

It need hardly be said that for heads and shoulders the table can be dispensed with. It is necessary only when photographing the whole figure. Loose drapery, lace, chiffon, etc., gives a dainty effect to a silhouette, introducing just a little half-tone and relieving the severe wooden character of the plain black and white print. The draperies should be white, and it may be necessary to rub down the portions of negative representing them.

"THE TOILET." *By H. O. Klein.*

Taken with the "Electra" flash lamp and the 32-candle incandescent lamp under shade. The former was placed about 15 feet away. Exposure, ten seconds on Ilford "Monarch" plate with Zeiss lens at *f*/8. (See "Portraits by Flashlight," page 292.)

PORTRAITURE BY DAYLIGHT—IN AND OUT OF DOORS.

Only the merest rudiments of this essentially winter occupation can be touched upon. Details and refinements must be studied from a handbook such as that by P. R. Salmon or the Rev. F. C. Lambert.

But within the space at our disposal we can, firstly, put the reader on his guard against the special dangers of indoor portraiture—dangers which do not readily occur to those who for the first time set up their cameras in the house; and, secondly, give him some hints on the quite opposite difficulties of portraiture out of doors.

INDOORS.

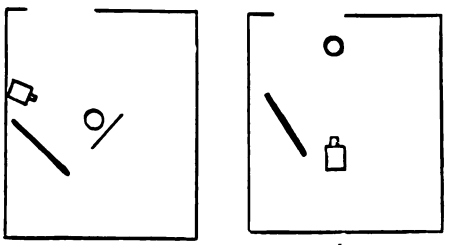
Indoors.—For purposes of practical work do not let us limit "indoors" to sitting rooms, drawing rooms, or the other apartments of the British home.

Digitized by Google

The opportunities for portraiture occur in many other places than these—in the shop of carpenter or cobbler, or in the schoolroom or in the inn parlour. The ruder and rougher the building, the better for our photographic purpose: the array of glittering knick-knacks in the drawing-room, as it is furnished by the young matron, being one of the minor obstacles in the path of the indoor photographer.

Lighting.—One window being usually the only source of light, it is soon discovered that the lighting of the sitter can easily be wrong. The most common mistake is to place the sitter sideways with the window and fairly close to it, with the result that one side is in strong light and the other in deep shadow, with little gradation between these two extremes. The effect is a hard or "chalky" portrait, not calculated to display to advantage the features of any but the most rugged Irving or Martin Harvey type of countenance. On the other hand, if the sitter's face is fronting the window, the light is the same all over the face, and the result is a corpse-like flatness, perhaps the worst sin of indoor lighting that can be committed.

The chief secrets of obtaining a pleasing modelling on the face are:—(1) A position for the sitter not near to the window, say 5 or 6 ft. from it; (2) a reflector on the shadow side of the face; and (3) softening the strong light coming through the upper part of the window. This latter casts heavy shadows



a. *b.*

Diagrams showing arrangement of camera and sitter for (*a*) portrait at distance from window; (*b*) portrait at window.

under the eyes, nose, lips and chin. We can get rid of this top-light altogether by going far enough back into the room, but then we lose the relief which it gives. With the sitter in a position nearer to the window the top-light is screened by pinning tissue paper over the window frame or using a screen (say of muslin stretched on a child's hoop) above the sitter.

Figure *a* shows how camera, sitter, and reflector may be placed, and is offered as the roughest hint as to arranging matters in an ordinary room.

The Background.—The wall or interior of a room is almost always the worst of backgrounds, unless stripped of ornaments and prominent objects, which, by hook or crook, manage to show up somewhere behind the sitter's head most prominently, causing us much work before they can be removed from the negative. Smooth brown paper damped and mounted on a clothes-horse or on a framework made for the purpose, forms a good dark background. For a lighter one a blanket will answer well—a white sheet is too light—or a light-colored travelling rug. One little dodge about backgrounds may be mentioned here, and that is on using some rug or drapery of prominent pattern when a plain background is wanted. It is really very simple. Get someone to gently move the background a little up and down and side to side during the exposure.

The reflector is a big piece of white cardboard or a white sheet stretched on a frame. It is all the better to have the reflector pivoted so that it can swing from its centre like a bedroom looking-glass. This movement is convenient in tilting it towards or away from the sitter.

The Lens and Camera.—The largest aperture the lens can be opened to may safely be used for portraiture indoors, that is to say, *f*/8: or *f*/6 is none too rapid.

The danger of indoor work is under-exposure, and as the exposures must not be long—to avoid movement of the sitter—there is need of a large aperture and a fairly rapid plate. In this as in all portraiture, it is well to use a lens of the longest focal length permitted by the distance between sitter and camera. In many rooms this is not greater than the orthodox 5½ in. for a quarter-plate, but it is better to have longer if circumstances allow.

Exposure.—In winter work—indoors or out—use a meter. Useful in summer, a meter is indispensable in winter, when the light falls off after noon with much greater speed than in summer. For indoor work it is convenient to work the meter at the quarter tint, otherwise the time taken by the paper to darken is too great.

In portraiture the beginner must learn to recognise the effects of under- and over-exposure: the former accentuating the features of the face, burying dark parts in one inky blackness, and the latter by the loss of contrast on the face, general flatness, and a lack of difference between tones which *were* different.

On development there is little to be said beyond the caution to aim at a thin delicate negative, for which amidol, metol, or rodinal is a very suitable developer.

Against the Light.—With proper precautions some most charming effects can be obtained by placing the

Digitized by Google

sitter close to the window, the chief light coming towards the camera and thus putting the side of the face, seen in the photogram, in shadow. The beauty of this form of lighting depends on preserving the roundness of the face and figure of the sitter, and to do this the reflector must be used to relieve the heavy shadow on the near side : but not too much reflector, or the effect of the straight lighting is lost. A beautiful profile is *the* subject for lighting of this kind, by which also transparent draperies, muslins, chiffons and lace appear with good effect. The arrangement of camera, etc., will be somewhat as in figure *b*. Plates should be backed and a liberal exposure be given, so that everything you want in the negative develops easily in about five minutes. In this way halation will be avoided as much as possible.

The fine piece of portraiture of this kind by Mr. M'Lean may be taken as an incentive and a standard by those commencing indoor work.

Sunshine is susceptible of many strong and beautiful effects, but it wants more skill in management than diffused lighting, and particularly so in small rooms. The wisest suggestion that can be made to those anxious to use it for portraiture is to commence in semi-outdoors such as a verandah, gateway, or even doorway.

PORTRAIT STUDY. *By W. M'Lean.*
(Taken by daylight only. From the Kodak Competition.)

OUTDOOR PORTRAITS.

Indoors the lighting is too strong in one direction —from the window on to the sitter. Out of doors the lighting suffers from an exactly opposite defect —it is too even all round. To obtain relief and contrast we must cut it off on one side or the other. One of the simplest ways of doing this is to place the sitter in the angle of a building where light from behind and from one side is quite cut off by high walls. Then there is probably too much top-light, and a light screen of muslin stretched a few feet above the sitter will greatly improve matters. With a second screen at the side we practically reconstruct a regular studio, and some very effective portraiture can be done with such an arrangement ; or better, with the portable studios constructed on the same principle by Tylar of Birmingham and others.

Those who want to study portraiture as it can be done without a studio should fix up a couple of stout parallel copper wires at about 8 ft. from the ground and about 6 ft. apart. On these can be hung screens of muslin or opaque cloth, with which can be obtained almost any sort of lighting.

Arranging Sitter and Background.—It is worth while to try heads, or half-lengths (head and hands, in sitting posture), and to make them a good size on the plate, instead of confining oneself to full-length figures in small size, amidst a great mass of surroundings, as is usual. Choose your background and arrange the camera before asking your sitter to be seated, for until you have gained experience you will be slow, and apt to tire a nervous sitter. Let the background be natural, for choice ; and remember that the nearer your main object is to the camera, the nearer will be the point beyond which objects are out of focus. As you will probably have to use a large aperture for the portrait exposure, the background must not be a very distant scene, if you want it very sharp. On the other hand, a distant object entirely out of focus will often make a very pleasant soft background of indefinite light and shade.

Artificial Background Reflectors.—A white sheet, a plain blanket, and plain rugs, obtainable in every household, give backgrounds of various tones, so that one can be chosen to suit any subject. Even an apron, or a focussing cloth, if held by an assistant, close behind the sitter, may answer as background. It is best to pin it to a broom handle or walking stick, so that it hangs flat. In some cases, especially in direct sunshine, there are heavy shadows under the eyes, nose, and lower lip. These may be considerably lighted up by laying a few newspapers on the floor around the sitter.

Lighting the Sitter.—The lighting must be chosen before the sitter is posed, or even the background

Digitized by Google

"CHIPS." *By Ernest Law*
(See "Indoor Portraiture," p. 297.)

selected. It is not well to place the sitter in sunshine, unless you have had much experience of this work (see later paragraph, however). With a generally diffused light, as from a lightly clouded or a grey sky, good portraits can be made almost anywhere, but even in these cases it is well to have something to give a little variety of light and shade to the face, and any building will do this. Suppose you want a full-face portrait, with considerable contrast between the lighter and the darker sides of the face, place the sitter within two or three feet of the side of a house, and with her shoulder toward the house. The house (of brick or stone) reflects very little light, and the actinic difference will be more than the visual difference between the two sides of the face. Every foot that the sitter moves away from the house will make the shadow side lighter. For diffused front lighting, place the sitter with her back to the house, and facing toward the most open part of the view. Remember that the more nearly you can see to the horizon, the more diffused will be your light. The nearer you come to houses or trees, the stronger (proportionally) are your top-light and your top-light shadows. Note what was said in previous paragraph *re* reflectors.

In many cases a soft lighting of the face may be obtained even where the top-light is hard and concentrated, by simply letting the sitter wear a wide-brimmed hat, which takes off the harsh top-lighting, and smooths out the wrinkles and shadows as if by magic. A white straw hat often lets through the brim and reflects from its under side just enough light to make a pleasant play.

Again, if your difficulty is that the contrast in lighting between the two sides of the face is too great, this may be overcome by hanging a white sheet (on a clothes-horse, or from a broom handle laid on top of a pair of steps) or pinning a few newspapers to reflect light on to the shadow side of the face.

Sunlight portraits may be made very attractive, if thoroughly well done, but they require much more careful handling than diffused light pictures. Few faces can stand the photographic effect of absolute sunlight, so that the best results will be secured if the hat, or a convenient branch of tree or bush, is used to shade part, at any rate, of the face. The wide-brimmed, thin white straw hat suggested in the last paragraph is very convenient for sunshine work, and will give a shadow that makes a fresh bright face very interesting. With sunlight portraits the background needs careful consideration. It should not be too dark, to contrast harshly with the figure, and should not be too hard and spotty. For sunshine portraits it is well to use a backed plate, which should not be very rapid, but of considerable latitude (preferably double-coated); and the exposure must be ample.

WINTER IN JAPAN: AT KAMS ON KYTT. *By M. Fugita.*

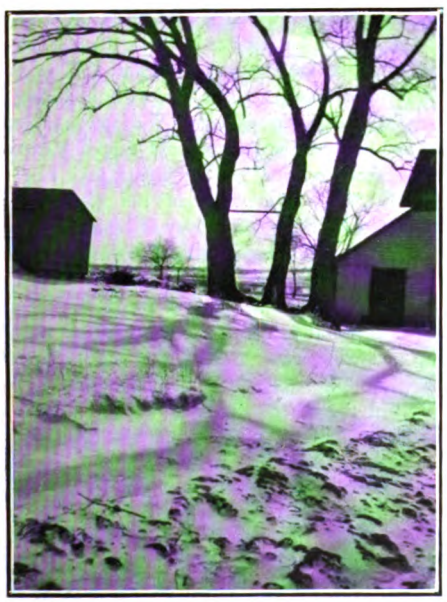
Digitized by Google

OUTDOOR WINTER WORK IN TOWN AND COUNTRY.

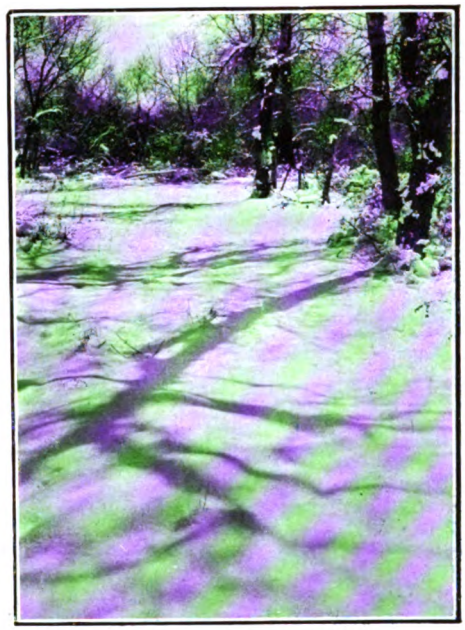
Among the photographers who visited the picturesque Cinque ports this year was one disappointed man. He returned from some weeks in those old-world towns with his plates untouched. And the reason? Brilliant sunshine from morning till night the whole time! Just now he is girding up his loins at the prospect of winter with mist and haze and other things which make the world beautiful. And London, there is no doubt, will be able to do for him far more exceedingly abundantly than he asks or thinks. Any South-Eastern official will support this prediction. Miserable man, say some—of the photographer, not the official—to see none of the glory of the sunlight. Happy man, say others, in finding what he wants in the winter brands of British weather. And without sympathising with people who talk solemnly about putting their cameras away when the winter is over, we can point to subjects and work which in the next few months are ours if we will but look for them.

Dying Nature.—No one can be insensible to the beauty of winter as it takes its first hold of the English landscape. As one descriptive writer pictures it :—

"What a change comes over the face of English nature with the first touch of sunshine after frost. For a few days the maples have been glorious as the king's daughter of scripture in raiment that shone like wrought gold; then suddenly comes the morning of fate, and each maple slips off its robes and stands naked and erect, with the gold spread round her feet. The walnut is another tree which undresses completely and at once for its winter sleep. In the evening you had seen it, solid and dark against the setting sun: next morning its bare twigs glisten through the mist, and the turf beneath is covered many inches deep in a rustling carpet of purple brown. But what a glory are the hedgerows during the last few days of their fight against advancing winter; brambles of tawny flame splashed with crimson, and shading to coppery brown: sycamores, mixed green and sulphur yellow, making an expressively bright contrast against the black of the dogwood, and the sombre green of the privet. Then the oak takes on its marvellous hues of orange, and the beech spreads sheets of terra-cotta, tinged with the glow of an Eastern sunset."



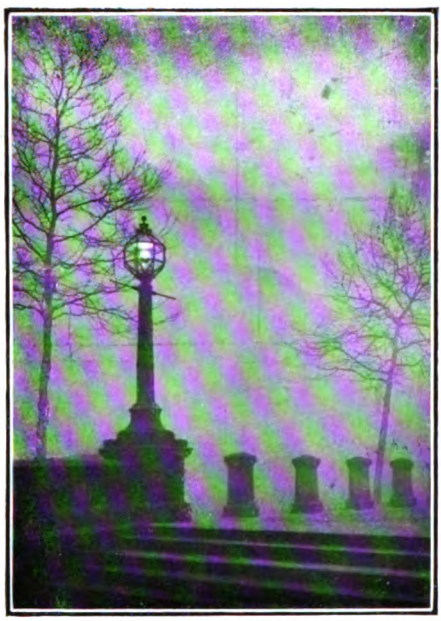
WINTER. *By R. E. Weeks.*
(From the Kodak Competition.)



THE EDGE OF THE WOOD. *By Thos. A. Morgan.*
(From the Kodak Competition.)

The glory of colors cannot be ours in a photographic reproduction, but the different colors of the trees will convert many a subject into a picture where there was none all the summer. At least that may be so, it we take the trouble to record the color-differences in correct tone, with an orthochromatic plate and a light-filter. Late autumnal scenes of gorse and bracken and bronzed foliage require, as few other subjects do, a color-sensitive

Digitized by Google



FOG IN LONDON—THE NATIONAL GALLERY.
By Henry Irving.

plate, a yellow screen, and full exposure. And though the opportunities for such work may have passed for this year, in some parts of England, in others it will be several weeks before the beauty of the autumn is gone.

Under Bare Boughs.—I am conscious of exhibiting a shocking ignorance of approved precedents in not putting snow and hoar frost in the forefront of these notes on winter work. It's the proper thing, of course, to commence with how the photographer must clothe himself (with three formulæ for encaustic pastes to be rubbed into his boots !), his headgear and his gloves, and the correct exposure for a snowdrift at 6 a.m. compared with that for a "normal landscape" in July at *f*/8 in the lunch hour. Alas for expectations ! Nature, nearly always coquettish, seems strangely unfeminine in the persistence with which she withholds the "good old sort of winter." She may change her mind this year, so I do not omit snow subjects, but come first to scenes of a kind that are with us every day until summer comes again.

Leafless landscapes have a charm of their own, to fully render which calls for the association of other features expressing the same theme. That theme, of course, is Nature, deserted by the sun and warmth of summer, stripped of her possessions, chill, solitary and alone. The fitting surroundings, therefore, in which to search for studies of bare branches are the edges of fens and meres, shores of lake or pool, all of which by the horizontality of their lines will aid the feeling of solitude and decay which it is our aim to suggest. Admirers of the pictorial work of Mr. J. B. B. Wellington will recollect a number of subjects where leafless trees and an open foreground of shore or marsh, or a flat village-green, are responsible for the feeling in the picture. The sky can aid in the task, one being selected where the clouds run in lines or bars, not in heaped-up masses.

A *backed* plate is the chief requirement in making negatives of these subjects, for without the backing, halation will destroy the fine outline of branches against the sky, and though it may be sometimes advisable to soften these outlines, halation is not the best means of doing so. It is better to use a large stop and leave a little diffusion in parts away from the interest of the picture.

The Town in Wet Weather.—The opportunity of the worker who must look for his outdoor subjects amid streets and houses, lies in a wet day, or rather in a day that is both wet and bright. Roadways then lose their monotony and run into patches of light and shadow as the light falls on their wet surfaces. The best effects are obtained against the light—the sun, directly or through light clouds, shining on to the camera. The lens must be shaded from the strong light, and a backed plate should be used.

A figure is often the making of pictures of this type, and if dark, which it usually is, it is often advantageous to let it place itself in the position of brightest light, the contrast of darkest shadow and highest light being an old trick in producing a strong effect. The exposure for such subjects must not be based on the good old rule of "expose for the shadows, and let the lights take care of themselves," for the *motif* of the picture will generally lie in the pleasing play of light and shade in the bright, wet foreground and middle distance, and these require a much briefer exposure than the dark objects in the same parts of the field. Sometimes it is useful to use a shutter, such as Tylar's cheap and convenient "Window" shutter, which gives more exposure to sky than foreground, but working it the other way about : or, in the case of some other shutters, putting it on the hood upside down : remembering that the bright and light foreground it is which needs to have its exposure curtailed in comparison with the rest of the subject.

Haze and Mist.—Sun shining though mist or haze, and even through actual fog, is perhaps the very best condition for pictorial work in towns. For then the distance, often with its obtrusive chimney

Digitized by Google

stacks and hideous blocks, is blotted out and so softened in outline that the imagination can "remould it nearer to the heart's desire." Many studies of street merchants, groups at a corner, gossips on the roadway, are made more easily under weather conditions such as these: the kind-hearted mist

WHY THE TRAINS WERE LATE. *By G. Adamson.*
(From the Kodak Competition.)

shuts out those irrelevant details which we ourselves should otherwise be at much pains to modify or expunge.

Ordinary plates are preferable to isochromatic for such work, for the latter may subdue in some measure the effect of the mist. Indeed an ordinary plate will sometimes disappoint us in this matter, robbing the scene of its shroud of white and being irritatingly communicative instead of discreetly reticent regarding the details of objects some distance off. This tendency may be counteracted in development by commencing with a solution containing more than the usual quantity of alkali, or fogging constituent, say half as much again. In this the plate is kept until a sufficient "atmosphere" is obtained, when it is rinsed and transferred to a restrained developer to give the necessary strength to the foreground.

WINTER HAND-CAMERA WORK.

Hand-camera work in winter means a combination of plate, lens-aperture and shutter, such that full exposures can be given in at any rate as little as $\frac{1}{25}$th of a second, and for preference, in less than this. Practical trial, or a study of exposures tables, will show that that means a very rapid plate, a lens working at *f*/6, and a focal-plane shutter. I would not suggest that outdoor snapshot work in winter is impossible without all three of these conditions fulfilled, but the conjunction I have just named describes the outfit of the man who is going to do successful work throughout the winter months. Even then there will often be occasions when the facility to give full exposure breaks down, just as there are in summer. But the worker who is so equipped need not limit his photographing to the bright days and the hours of them immediately before and after noon.

First, as to plates. The brands of extreme rapidity are much more numerous than they were a year ago, and it would be invidious to name any one from perhaps half a dozen. But a certain caution applies to all of them, and that is:—Get them fresh. The writer, both in practical work and by tests in the dark room, has proved to his own satisfaction the comparative quickness with which these ultra-rapid plates fall away from their very highest rapidity. The makers do not dispute this, though they may not advertise it. Do they not enclose such plates more effectually from the atmosphere, a tacit admission of their sensitiveness to change as well as to light? My caution is a very needful one. See that your dealer can give you a fresh batch, or obtain direct from the makers.

Regarding aperture of lens, one greater than *f*/6 is not of any practical advantage in the writer's experience, unless a reflector type of camera is available. It is none too easy to judge distances with the accuracy necessary for an aperture of *f*/6, let alone one of *f*/4. The writer finds it so at any rate, and he rarely expects any advantage to the negative by opening his anastigmat to its full aperture, although that aperture is *f*/4. What you gain in exposures you lose in sharpness, and generally the loss in the latter is sufficient to render the negative useless. With a reflector camera the case is altered, and the larger aperture renders focussing

CHILDHOOD JOYS. *By Miss Grace E. Mounts.*
(From the Kodak Competition.)

easier and gives us the better exposure concurrently. Still another of the many advantages of this type of instrument.

Authorities differ as to the precise extent to which the focal-plane shutter is superior, in exposure-giving power, to other shutters, but that it is superior to

Digitized by Google

any admits of no contradiction. Mr. Kilbey, in dealing fully with focal-plane shutter in his *Advanced Hand-Camera Work*, places the efficiency at four times that of the average shutter affixed to the lens. That is to say, when giving an exposure of $\frac{1}{25}$th of a second the light admitted to the plate is equal to that admitted by other shutters in $\frac{1}{6}$th of a second. Needless to say, that's just what we want in winter; and those who have the opportunity to compare a focal-plane with one or other of the usual types of shutter will soon convince himself that, whatever the ratio is, it is high enough to make all the difference between a negative which is sufficiently exposed and one that is not. Let not my readers imagine that I am now recommending the focal-plane shutter for such extremely brief exposures as $\frac{1}{1000}$th of a second. The ability to give such extremely short exposures is a special property of the focal-plane shutter, but it is a property of secondary importance for purposes of practical photography. By far the more important and useful one is the greater "efficiency" of the shutter. We don't often need to work so rapidly as the small fractions of a second which limit the speed of the shutter at one end of its scale; but we do want, in winter especially, to expose as fully as possible while giving an exposure of moderate speed. For which reason there is special praise for focal-plane cameras which can be sold at moderate prices, as they do not run up into the high speeds. There will have to be more of them.

SNOW SCENES.

Landscapes under the snow may be almost as varied in character as in the height of summer. And these differences must be considered by the photographer, despite the formulæ vouchsafed to him by writers who have advised as though there were but one effect to be seen and recorded when Nature puts on her winter dress. A book might be written on snow-covered landscapes and how to photograph them; and indeed one number (57) of *The Photo-Miniature* gives itself up to this fascinating branch of landscape work. First of all, take foreground studies in the snow, one of the best ways in which to utilise the snow for pictorial effect. A little stretch of meadow, one or two stunted shrubs, a tree or two, and the rest depends on the lighting and how it is managed. In the first place, the lighting should be strong and from one side. That is needed to show up the delicate gradations of light and shade on the surface of the snow, and a quite low point of view for the camera aids it greatly. Shadows on snow, as the examples here reproduced illustrate, are some of the most picturesque things which the camera can find, and the best of them is that we do not need to travel far for our raw materials. In almost any corner of a field or on any of the London commons and parks you can find the opportunity for work of this kind. To render well the delicate tones of the snow, a color-sensitive plate and yellow screen are advisable, not for their sensitiveness to green and yellow, of which the landscape contains next to none, but for their lesser blue sensitiveness. The light reflected from brightly-lit snow is very blue, and the slight gradations which occur in these foregound studies are easily missed by a plate unduly sensitive to that color. A light screen is sufficient, one prolonging the exposure about five times. Plates, it need not be said, should be backed. Subjects such as these call for no special development, except that care must be taken not to get the negative too thin so that the snow gradations are wanting in contrast, nor, on the other hand, too dense, as then all the high-lights in the snow print white instead of showing differences.

A different class of snow subject is that in which dark heavy masses of trees contrast with the delicate surroundings of the snow. These belong to a more difficult order, the contrasts being so great as to cause the snow to be over-exposed when sufficient time has been given to the dark portions. The best step to take is to use a thickly coated plate, or one with two coatings, and give a full exposure. Develop them in a weak and restrained developer. This plan has the recommendation of Mr. Osborne I. Yellott, who in *The Photo-Miniature* mentioned above gives the following formula:—Metol, 30 gr.; hydroquinone, 30 gr.; dissolved in water, 20 oz.; then add sulphite of soda cryst., 1 oz., and carbonate of soda cryst., $\frac{3}{4}$ oz. For development of snow negatives, take of this 2 oz., and add 4 oz. of water where there are no heavy masses of dark in the foreground, or 8 oz. of water where there are. Before use add one drop of a 10 per cent. solution of potassium bromide to each ounce of solution. If plates developed in this way show too much flatness after rather prolonged development, the dilute solution may be poured off and the plate finished in a solution of normal strength, 2 oz. of stock solution and 2 oz. of water. A pyro developer may be used, but if so, should be diluted several times beyond the normal, and a fresh solution used every few minutes until development is completed.

With careful exposure and development, you should get negatives with the well illuminated shadows which characterise a landscape under the snow. The sky also should be in correct tone; it is frequently darker than the snow foreground.

Hoar Frost.—A heavy mist is the accompaniment of the most beautiful effects of hoar frost, and to secure the subject at its best the exposure should be made before the mist has cleared away. The veiling

Digitized by Google

of the distance and middle-distance adds greatly to the charm of the landscape ; and further, the hoar frost itself will be gone within a few minutes of the mist clearing off. Choose a view-point such that part of each branch is shown bare, this displaying to greater perfection the beauty of the rime.

Still-life studies covered with hoar frost are even better subjects than landscapes. A twig, a spray of fir, or a dead plant in a flower-pot, are among the objects which the photographer may find thus glorified : one of the most beautiful the writer has ever seen was a spider's web.

Printing Winter Subjects.—A cold black (bromide, "gaslight," or platinum paper) should be selected for winter scenes, or else a deep dark blue, such as carbon gives *par excellence*, although an approach to it can be obtained by toning either of the above mentioned kinds of development papers. The prints should be matt : glossy papers and those of warm tone are most unsuitable for giving the proper effect to the prints. One very pleasing way to turn out prints of winter scenes is on opal, either the sensitised bromide opals, which are treated exactly like bromide prints, or by the carbon process, transferring the tissue to matt opal. The former is the more convenient and expeditious, and the opals when neatly framed make the most tasteful Christmas presents. Any glass-cutter can convert the rectangular opal into a circle, a shape which is daintier, in the estimation of many, and makes the opal a more legitimate ornament.

WINTER OCCUPATIONS—ENLARGING AND PRINTING.

The Picture within the Print.—The beginner errs in not enlarging from his negatives sooner than he usually does, but winter is the time to make good any deficiencies in this direction. And in enlarging let him not think it necessary to use the entire negative. Pictorially the part is often greater than the whole, Euclid notwithstanding. And do not be afraid, either, of making a good big enlargement from this part. Four or five diameters, that is, 4 in. to 16 or 20 in., is not too much for a reasonably sharp negative. The largest picture in the R.P.S. Exhibition this year (No. 223, by C. B. Howdill) is from a quarter-plate negative taken at *f*/6. It measures 40 × 20 in., and viewed at the distance which such a size requires, does not betray its great enlargement. Pictorial effect apart, enlargement "opens up" a picture, and if the negative be a suitable one, not dense or strong, but thin even to flatness, the results will thoroughly satisfy the worker with his small apparatus.

Enlarging.—If there is a suitable room with a window which can be closed by a shutter, enlarging *by daylight* can be done with the camera employed in making the negatives, if this is fitted with a decent R.R. lens and has a focussing movement. The cheaper kinds of box and other cameras cannot be thus utilised for enlargement, but cameras of the hand-stand pattern, as well as any of the regular tripod instruments, can be used. Light is blocked out by the shutter save for an aperture in the latter, into which the back frame of the camera is fitted, the instrument resting on a shelf. The negative taking the place of the ground-glass, an enlarged image is cast on an easel according to the distances of lens from (1) the negative and (2) the sensitive paper.

The drawback to this method is that the light is always varying, and therefore the difficulty in exposing correctly is much greater than when an artificial and fairly constant light is used. Moreover, an open view from the window is desirable to evenly illuminate the negative. If there is not one, a reflector of white card or looking-glass must be placed at an angle of 45° to the negative, throwing the light from the sky through it. The balance of advantage is heavily with the artificial light.

Enlarging lanterns and cameras now cost very little compared with the prices of a year or two ago. We purchase a lantern, if we have the use of a room which we can make perfectly dark, focussing the enlargement on an easel ; or we get a camera, if our work must be done in rooms which cannot be reserved in this way. With a good apparatus of either form we can enlarge the whole or the part of a negative to the maximum size. The enlarging lantern is simply a magic lantern so made that no light can escape from it, and is supplied with oil, incandescent gas or limelight. The second of these is certainly the best for a beginner. An ordinary magic lantern having the usual 4 in. condensers can be used for enlarging from a portion only of a quarter-plate negative, by arranging to box in the light. If the whole subject of a negative larger than 3¼ × 3¼ in. is to be enlarged, a reduced negative is first made, and this enlarged in the lantern.

With enlarging cameras we have not the scope we have with the lantern, as the size of the enlargement is limited by the dimensions of each apparatus. Also it is not easy to shade the paper during exposure, as is often advisable, nor can clouds be printed in so readily as when a lantern is used. Cameras, however, are very moderate in price, and can be used both by day and artificial light. As to the latter, magnesium ribbon is one of the readiest illuminants. Two or three lengths of ribbon are hung from a wire placed about 3 in. behind the negative, a piece of ground-glass or parchment paper being interposed to diffuse the light.

Digitized by Google

As a rough idea of the magnesium necessary, three pieces of ribbon 6 in. long may be used for enlarging a quarter-plate to 10 × 8, using a lens marked *f*/8 and rapid bromide paper. The beginner must be cautioned against burning the magnesium in the room where developing is done, for that would spot and mark the prints as the dust of magnesia settled.

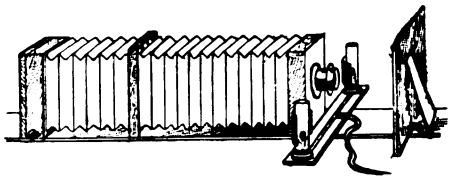
One or other system of enlargement having been adopted, the rest is easy. Bromide paper is chosen from among the many brands, rough or smooth, tinted or glossy. The maker's instructions give developers and other formulæ, and these the beginner should adhere to. "Smooth" and "rough" are elastic terms in the designation of surfaces, and it will be discovered that the "rough" of one maker is no rougher than the "smooth" of another. The various brands differ also in contrast-giving quality, some yielding vigorous prints from negatives which on others would give a soft enlargement. All this makes for variety of effect, and the worker can adjust his materials to the needs of his negatives. To choose one paper only and stick to that for all and every negative is not the wisest course. A rapid paper, as most commercial papers, will be the best for general work, a slower one for stronger enlargements, and a tinted one (to be afterwards toned) where the negatives are over-dense or "hard."

Development and its after-operations call for no special mention: they are those customary for bromide paper.

The first enlargements will perhaps be disappointing by their spottiness, but that is easily remedied by the use of retouching pencils, a set of which (1s.) should be purchased. They should be finely sharpened and applied to the spots in fine strokes or dots. It will be found easy to retouch defects arising from the negative or formed in the enlarging process, and every enlargement will usually require a little spotting.

Enlarged negatives are often useful, not only for making enlarged prints in print-out processes, but when a large number of prints are required from one negative. The best method of procedure is to make a positive transparency by contact, and to enlarge this on to a slow "landscape" or a rapid "lantern" plate. The transparency may be made on a plate of the "lantern" variety, but it must be soft, indeed flat looking, with a slight veil over the whole image. A brilliant effect such as a lantern slide is fatal to getting a good negative.

But a more convenient way for those without special apparatus is to make a print on glossy P.O.P. and, without fixing or toning it, copy it direct on to a plate of medium rapidity by artificial light. This may be incandescent or ordinary gaslight, as explained under "Copying." During the short exposure the print is not affected. The camera must rack out to several times the focal length of the lens for a considerable enlargement to be



obtained. The following figures give the distances for enlargements from a quarter-plate negative with a 5-in. lens:—

Size of enlargement,	½ pl.	¼-pl.	10 × 8	12 × 10
Distance from print to lens, . .	8	7	7	6½
Distance from lens to plate, . .	12½	15	17½	26

If a 4-in. lens be used these distances are one fifth less; if a 6-in. lens, one fifth more, and so on by ordinary rule of three. The figure shows the arrangement, the camera being a home-made one to fit a large dark slide purchased second-hand.

Enlarged Transparencies.—Using large sizes of the "lantern" brand of plate made by almost every maker, the winter worker can produce his enlargements in the very handsome and decorative form of window transparencies. A picture of this kind in 10 × 8 or 12 × 10 size makes the most excellent ornament for hanging in a window, and there have been photographers with the enthusiasm to make transparencies to fill the whole of some window having an uninteresting outlook. The most suitable subjects for these purposes are those of bold, strong character, without much minute detail. Enlargements of portions only of negatives will supply transparencies of this kind. Exposure and development may be such to give a tone of warm brown or black, as best suits the particular subject. A favorite developer of the writer's for rich warm tones is as follows:—Soda sulphite, 180 gr.; ammonium bromide, 30 gr.; ammonium carbonate, 60 gr.; caustic potash, 50 gr.; water, 10 oz. Add dry pyro (or 10 per cent. solution) at time of use, equal to 3 gr. per ounce. With a fairly full exposure this developer gives very rich warm tones.

Pyro and stock solution should be mixed fresh for each slide.

OPALS AND "OPALINES."

And other Methods of Using Prints.

Opals.—One form of winter printing is resorted to far less than the character of the results deserve—I mean the bromide opal. At least two firms—Ilford,

Digitized by Google

Ltd., and the Paget Prize Plate Co.—make sensitive opals which are used exactly like bromide paper. The opals cost 1s. 6d. a dozen in quarter-plate size, and with a little extra care in printing, this form of contact print or enlargement is one of the most pleasing it is possible to make. The extra care is required in getting the picture on the opal with an even and clean border. It is often well to mask, and then the mask must be central. To ensure this, take a printing frame a size larger than the opal itself and prepare a mask of the same size as the opal, being careful that the opening is cut centrally in the mask. Place—in a good light—the mask in position on the negative, and then place the two in the printing frame so that two adjacent sides of the mask coincide with two adjacent sides of the frame. Now lower the light, and being careful not to move the mask or negative, place the opal against the corners of the negative frame occupied by the mask. Vignetted opals are not difficult to make. In making them by gaslight use an ordinary vignetting glass, but place it about half an inch in front of the negative, by glueing a bit of cork to each corner. Then expose to a candle, wax vesta, or other small light, placing the vignetter in the line of the light.

Cleanness of the margins is a point of importance in making a nice-looking opal, so that care should be taken not to overwork the developer. If any markings appear, the best way to get rid of them is the iodine-cyanide reducer given elsewhere for bleaching out prints (see "Line Sketches from Prints").

Opals should be varnished to protect the gelatine film, using crystal varnish as sold, or making it by dissolving gum-dammar in benzole, about 30 grains in an ounce.

An old dodge in the finishing of an opal, which may not be known to some, is to back it with a colored paper which, showing slightly through the opal, modifies the tint of the picture.

"*Opalines.*"—In its worst form the opaline is a justly despised form of print seen at seaside resorts, where it represents the depth of bad photography. It is understood that the opalines from the fancy emporium window eventually find a resting place in middle-class drawing-rooms, but I plead for prints in this form which shall be deserving of better things. There is no reason why a print squeegeed to a glass plate should be vulgar; and as a "print on a glass" is esteemed by the non-photographic person as something superior to the same print on a mount, there is good ground for choosing the opaline as the form in which to make presentation prints. Also it is much less trouble to turn out a dozen opalines than to finish and mount a dozen prints. "Opaline glasses," the plates to which prints are squeegeed, are sold at cheap rate by the large dealers. Bevelled glasses for half-plate prints cost about a shilling per dozen, or twice that price if the bevel is gilt. "Leatherette" backs in this size cost another sevenpence or eightpence per dozen. Old negatives which one may wish to use as mounting glasses are not much good for the purpose, as the edges are sharp and rough. The glasses having been cleaned, and the prints made, the next business is to put the latter on so that they will stick. No alum or formalin should have been used in making the prints, or this will be difficult. Nor should the print be allowed to dry before mounting on the glasses, as the gelatine hardens in the process. The glasses are cleaned with whiting and water, applying this mixture, letting it dry, and then wiping it off with a clean cloth. Gilt-edged glasses may be damaged during cleaning, and so it is well to varnish the gilt border with a "white hard" varnish.

Prints are immersed in a solution made as follows:—Swell gelatine (¼ oz.) in water (5 oz.) until soft, and then liquify it by placing the vessel in hot water. Strain the hot solution through muslin into a dish, keeping warm by standing in another dish of hot water. Each print is allowed to soak in this solution for about a minute, and is then placed on the glass. Air bubbles are removed by sliding the print nearly off the glass and sliding it on again over the edge. A squeegee is also used to press the print down and remove minute bubbles. The mounted prints are put away in a warm place under pressure to dry.

So much for the print as it is usually "opalined." The opaline may be made in many variants of this plain pattern. The border left on mounting a print on a rather larger glass may be filled in various ways. A backing of paper can be interposed between glass and back. The color should be a quiet one: grey, cream, or one of the browns or greens now supplied for mounting purposes. Or, instead of using a bought back at all, the glass may be backed with a mounting paper and bound with a strip of colored paper or *passe par tout* edging to a stout backing of card. In this latter form the opaline is practically a print mounted *passe par tout* fashion, and for this old negative glasses may be rescued from useless oblivion after all.

Using Small Prints.—The indoor worker should not despise the small print as beneath his notice. A glance at some of the frames of Brownie prints in the present Kodak exhibition would show him what can be done by suitably mounting up half a dozen in one frame. A convenient way of framing a number of prints in this way is to place them wet, face down, on the glass, shifting them until the proper position is found, and then, after squeegeeing

Digitized by Google

From a matt bromide print.

From an ink drawing after bleaching.

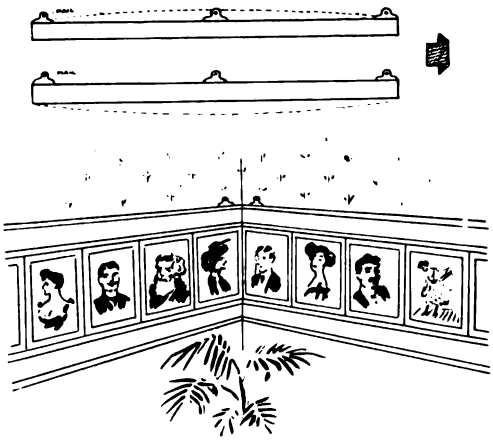
them down and drying the glass, applying a thin coat of mountant to the back of each. The mount is then applied, the back of the frame put in, and your work is done.

Another pleasing way of using small negatives, or of printing from portions of larger ones, is to make the prints on matt paper of a larger size so as to leave a broad white margin. A number are placed in a cover of "Art" mounting paper, one or two holes punched through the back, and the whole laced together with a bit of ribbon.

Line Sketches from Prints.—A useful exercise for those who have some knowledge of drawing consists in the conversion of prints into line drawings. Either matt prints on bromide, gaslight, or P.O.P. paper may be used, the latter being fixed but not toned. The ink is a waterproof one, which may be made at home from shellac water-varnish, but is much better purchased as made by Higgins under the name "Waterproof Indian Ink." The print is drawn over with the ink and a fine steel pen, the worker selecting the lines best suited to give a black and white version of the subject. This requires a fair amount of skill, but is also good practice in judging of the effect of lines. Parts may be left out and additions made as seems desirable, and stippling and shading used to any extent. When the line sketch is deemed complete, the photographic basis of the print is entirely bleached out, wiped away with a powerful solvent of the silver image. The reader will understand that any "reducer" might be used for this purpose, but in practice one that acts quickly and without stain is *the* one to use, and the best is the iodine-cyanide. It is made as follows, not forgetting that both constituents are poisonous, the cyanide intensely so:—The solution should not touch the fingers any more than is absolutely necessary. Ten per cent. solution of iodine in methylated spirit, 60 minims; 10 per cent. solution of potassium in water, 10 minims; water, 1 ounce. The two stock solutions can be used in greater quantity if this strength does not work quickly enough: it ought to wipe out the picture in thirty seconds, leaving the Indian ink lines. The print is then allowed to remain in water for about five minutes, and is then dried.

DECORATIVE WORK.

Uses for spoilt negatives have been suggested many a time, but not infrequently several shillings would need to be spent in following a writer's advice on using up sixpennyworth of glass. The following notes describe one correspondent's methods (of utilising old glasses in the decoration of a room) in which the ratio of money spent to value obtained is not unduly high:—



For an ordinary-sized library or small dining-room, take about forty spoilt plates (half-plate) or old negatives. Thoroughly clean: a basin of hot water, an old knife, and a clean towel will do this.

Digitized by Google

Make a tour of the house and seize all your accumulated stock of cabinets, prints, etc., relatives, actors and actresses, etc.

Cut some strips of fancy or colored papers (assorted). If you do as I did you will cut up the decorator's book of wall-paper patterns—if you have one in the house. With these strips—which should be about an inch wide—bind the print to the clean glass, allowing about half an inch of the colored strip to show all round the front of glass.

This preliminary work having been done, you fix your covering over the mounted prints round the room. Bring four or more lengths (according to your previous measurement) of ordinary picture moulding. Any pattern and price you prefer, of course, although personally I used the plain gold 2-in. moulding.

Neatly cut or join the moulding according to your wall space, and fix two lengths to wall, using ordinary 3-in. brass-headed nails, and leaving space between the two *equal to exact* height of glasses.

Fix the *ends* only in the first place to enable you to bend (as illustration) and slide in, from the centre towards either end, the various pictures, arranging the subjects and the colored bindings with as much taste as possible.

When you have a few at either end, straighten and fix your bottom piece by knocking in a nail in centre hole. Then fill up all the space with the glasses, and finally fix all with a sixth nail in centre of top moulding. You will observe that only the brass heads of the three top nails will be visible, the bottom nails being hidden by the pictures.

The glasses will want tightening to make them stand out and up quite flat and firm. This you will do by pushing crumpled newspaper between each glass and the wall.

The method is simplicity itself, and far easier to carry out than to explain, whilst the effect to a room when these pictures (which should be on the eye level) are fixed around is most pleasing.

Photography in Decoration.—Applications of the camera to decorative purposes have already been mentioned, and the subject is one which deserves much larger space than can be given to it. In the decoration of articles of furniture and of rooms; in the provision of ornamental knick-knacks dear to the feminine mind, any stock of miscellaneous negatives may be turned to good account. It is all the better, of course, if the photographer goes to work with set intent to provide prints to serve as ornaments.

In the photographic decoration of panels and friezes, carbon prints possess a rich character of their own, and the worker in this field cannot afford to neglect this process. The example of a decorative print by Robert Mackay is reproduced from a carbon print. Mr. Mackay says of it:—"The original negative was taken in the gardens of the Earl of Zetland at Upleatham, near Saltburn. The plant belongs to the *Eryngium* group, but to which I do not know. I am inclined to think it is *Eryngium amethystinum gigantium*, a cultivated sea holly. My camera is a 'Sanderson' quarter-plate, fitted with Cooke lens, Series III. For work of this kind I usually use my extension lens, which increases the focus to 8·3 in., using stop *f*/11, with one second's exposure. I *always* use backed plates, and in this case the original negative was made on an 'Imperial' special rapid. The enlarged negative was made on an Imperial 'Ordinary' by daylight and the Cooke lens was used. For the development of small negatives I use pyro potash, 'Beach's' formula. I like this developer very much. It is energetic, very clean to work, and free from stain, but for enlarged negatives with *very dilute* developer, I prefer ortol, which I think works cleaner."

The original print was exhibited two years ago in the "Royal," and was purchased by the Council for the permanent collection.

DECORATIVE SCHEME FOR FRIEZE. *By Robert Mackay.*
(See also "Competition Notes," p. 314.)

Digitized by Google

HAND WORK ON PRINTS.

Coloring Prints.—Though we may justly rail at the colored print as a thing abominable, the fact remains that in the eyes of many people, a print, even badly colored, is a thing of beauty, the human joy in color as color blinding the judgment to imperfections in coloring. And moreover, in the coloring of lantern slides there is much scope for work which does not call for highly skilled coloring. Diagrams, copies of woodcuts, etc., are rendered far more acceptable by coloring, and the task is one for the winter evenings. Although coloring cannot be taught from a printed page, yet some few hints may be given to put the beginner in the right way. The easiest form of coloring is with aniline tints or color-solutions such as are supplied by Günther Wagner, Daniel Judson & Sons, and others. The colors can be applied to almost any print without previous preparation of the surface. A gelatine-surfaced print, however, takes such colors best: collodion and albumen are not so receptive of the dye-solution. In tinting albumen prints, it is the custom of some workers to apply a size made by dissolving gelatine in acetic acid to a pasty mass and then further diluting this with water in the proportion of one part of paste to six parts of water. A better plan, because the application is not acid, is to dab over the print with some solution of prepared ox-gall, the colors "taking" when the print has dried. Special solutions are sold for the preparation of collodion prints.

The best brushes are sable, and as a guide to size and quality, I quote Miss Phillis Bell, who, writing in *The Photo-Miniature*, No. 44, says:—

"The most suitable sizes are from No. 2 to No. 7. The middle sizes are best for painting the face, except in very small miniature work, and the larger ones for the hair and drapery. Test the brushes when you buy them by wetting them, and see that the hairs keep together, and come to a straight and even point. Choose those that are mounted in tin and not in quills, as the former are firmer, more serviceable, and wear better. It is useful to have a few camel's-hair brushes for wetting the prints with, and putting in broad washes in background and drapery, and have also a flat camel's-hair brush for softening the edges of washes when the color comes too strong and harsh. An eraser, a crayon stump, indiarubber, and a scalpel or sharp penknife are all necessary to the outfit, and some fine pumice powder for rubbing on carbon prints to obtain 'tooth' when such have to be painted"

A little book might be written on coloring, and yet not teach the beginner as much as a month's practice and observation. From tinting he can progress to water colors and oils. Mention may be made of the powder colors sold as "Velvotint" by J. Barnard & Son. These are applied with a paper stamp to the dry print and fixed by steaming.

Crystoleums.—From coloring proper of prints to the old and much-patented "coloring behind" method is but a step, and this latter method demands even less technical skill in the use of artist's tools than the methods considered; the other parts of the process, though not difficult, must be carefully performed. The print for crystoleum should be on albumen paper, the process universally in vogue up to some fifteen years ago. There are now few albumen papers on the market — Messrs. Griffin's is, perhaps, the leading brand—but those who prefer can send their negatives to a trade printer, such as Palmer & Co. of New Barnet, who make a specialty of albumen work. The albumen print, home-made or bought, is fixed to one of the pairs of glasses specially sold for the work. A starch mountant can be used, or better, one of the special adhesives sold for the purpose. When dry, the print is rendered transparent with "Cylvoleum," the action of which is complete in an hour or two. Now we apply a certain amount of coloring, confining the work at this stage to small details or delicate coloring of larger portions. Oil colors thinned with a light medium are used. The second glass of the pair is now bound up, a thin mask or border-strip separating it from the first. The chief of the coloring is done on this second glass. The two are then bound up in any convenient way. The soft effects obtained by this duplex application of color is one of the chief charms of crystoleum; the ease and simplicity of the process are its recommendations to the unskilled.

CONCLUSION AND POSTSCRIPT.

The limit of our space is reached and yet there is much that should be said of the photographic opportunities of winter. For which reason a cloth-bound edition of these special articles, together with others which complete the story, is issued by Messrs. Dawbarn & Ward, Ltd., at sixpence net, postage one penny. The additional chapters deal first with the shadow side of winter photography—the troubles which follow from cold weather, when making negatives and printing them; which troubles, let it be said, are not inevitable. Parlour development is the subject of a further section, and then comes a monograph on copying: plain instruction on adapting apparatus to that end, on working by day and artificial light, and on the numerous expedients and precautions necessary in this branch of work.

It is to be hoped that the publication of Photography in Winter *in form for the book-shelf will still further strengthen the conviction that the opportunities for using the camera or for indulging in other branches of photography are as varied and as interesting between November and March as in the months of spring and summer. May it be so!*

Digitized by Google

MOUNTING THE EXHIBITION PRINT

BY FREDK H. EVANS.

This series of progressive lessons in the modern border-mounting of prints, which commenced in the January number of The Photogram, *is continued each month throughout the year. The instruction is given in reference to an actual example to be mounted by the reader on the paper, or papers, of the covers.*

This month's exercise.—Print:—"Approach to Kelmscott Manor," by Fredk. H. Evans. Mounting Papers: Lindenmeyr's "Nut Brown" (this month's covers), "Stone," and "Genova."

In place of the usual notes on the use of the papers, Mr. Evans this month offers some advice on the mechanical part of border-mounting.

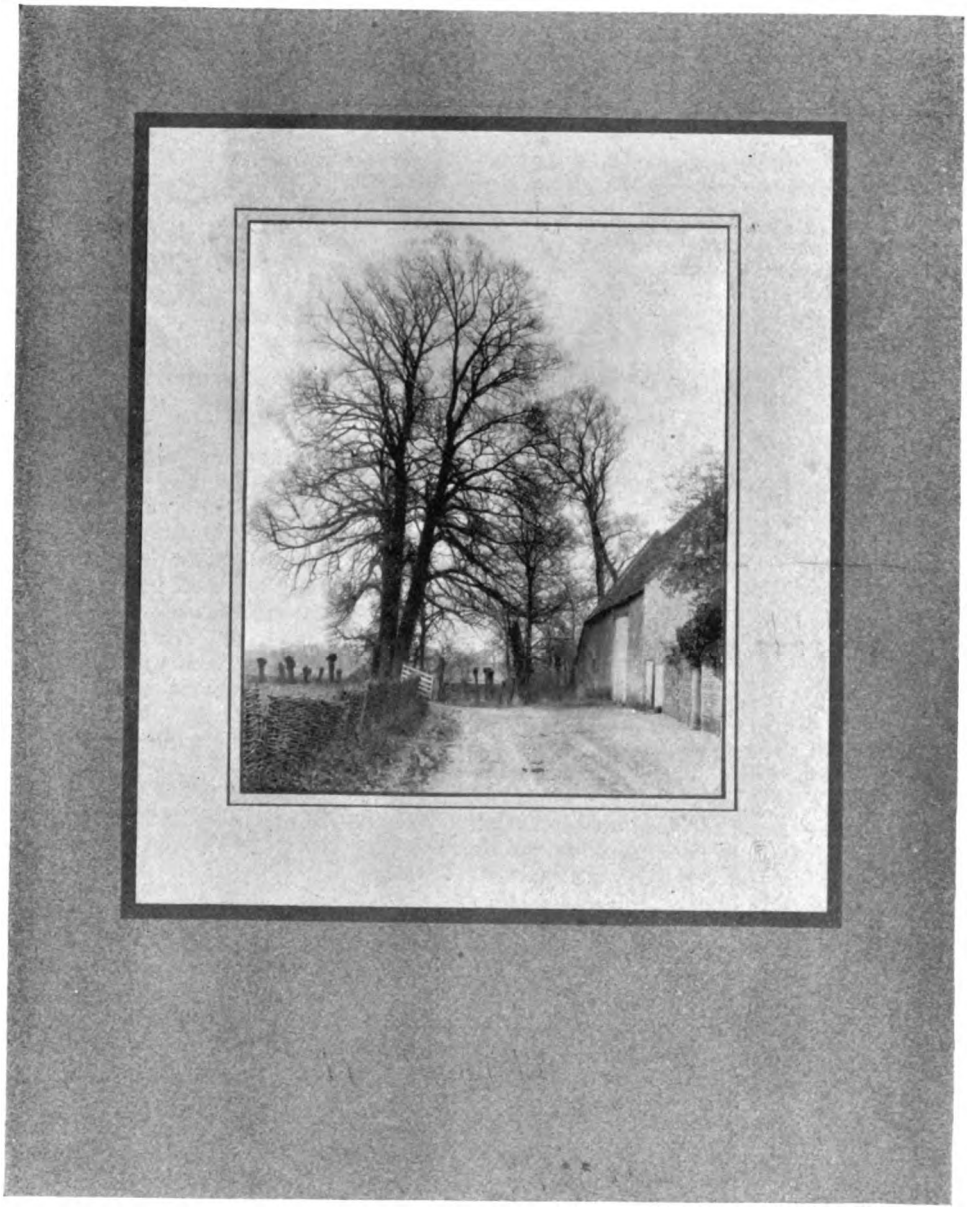
THE actual cutting of the papers is often thought the most difficult part of this multiple mounting, but it is a mere case of moderate practice to ensure technical efficiency. For the greatest ease and certainty a guillotine is necessary. In choosing this see by actual use that the blade cuts truly its full length without any buckling of the paper, and that it will cut tissue as easily as a thin cardboard. Also see that the rule at the top of the board is accurately placed at a true right angle to the cutting edge; the slightest deviation in this will mean endless trouble and waste of both time and paper. It is a safeguard against an accidental shifting of the paper during the cut to place a steel straight-edge on it as near as possible to the cutting edge, and keep it firmly in place as the waste edge is cut off. If a cutting board is preferred to a guillotine, let it be of zinc instead of the glass often suggested. Glass is slippery for the paper, and speedily dulls the knife edge. Zinc has neither of these faults, and if occasionally turned round so that the cuts do not get made into ruts, it will serve for many thousands of pieces of paper. The cut should not be heavier than will just sever the paper. The sheet of zinc is best used screwed on to a stout board, one that will not warp; the screws should be countersunk so that a ruler or straight-edge may lie perfectly flat on any part of it.

In cutting papers for multiple mounting, do not first cut and then endeavor to place the print or other paper in position; but stick the print on to its first colour, allowing enough margin as waste to make cutting it away quite safe and easy. This margin should be measured and pencilled off, when it will be quite simple to bring the blade truly in cut from point to point as pencilled. If an extremely narrow margin is wanted, it is best not to mark, say for less than a sixteenth, but to trust to the eye; practice on waste pieces will soon give proficiency in this apparently difficult but quite easy feat.

The waste in cutting away the margins *after* the print has been stuck down is far less than the attempting to place a print accurately in position on a piece of paper already cut to measure.

"Eder's Jahrbuch," 1904 (Halle: W. Knapp; 8s.).—There are other yearly reviews of technical progress in photography, but none like unto Dr. Eder's. The eighteenth volume runs to 660 pages, and classifies, abstracts, and indexes every paper or article in any way advancing the technics of pure and applied photography. The original contributions this year are chiefly concerned with photo-optics and color photography, and include specially detailed reviews of recent progress in tri-color and in stereoscopy.

Digitized by Google



APPROACH TO KELMSCOTT MANOR.

MOUNTING THE EXHIBITION PRINT.

Scheme of borders—the narrow dark bands, Nut-brown; the light band and border, Stone; the outer margin, Genova.

The print to be mounted is presented as a supplement this month.

Digitized by Google

TWO ADVANCES IN THREE-COLOR PHOTOGRAPHY.

THE professional has frequently been advised to take up three-color, but well-intentioned as this counsel is, there is small wonder that up to the present the response of the professional has been meagre. For while the making of three-color negatives may have been reduced to something like a commercial possibility, the making of decent three-color prints, of reasonable similarity in say, half a dozen copies, is a task, if not beyond the skill of the average professional, certainly far beyond any possibility of profit, if copies are to be sold at a price to entice sitters' orders. This is true of stained-gelatine prints, or of dusting-on colors; and while photo-mechanical "half-tones" may be more alike, their expense is prohibitive for small numbers, and, moreover, they are generally of a quality that would not attract the average client.

There are, however, two new printing processes about to be placed on the market that promise to do much to smooth away the difficulties that now exist for the professional ambitious to supply three-color portraits, assuming he has mastered the problems concerned with color-filters and the production of the three correct color-record negatives.

The first is an application of the carbon process to three-color; for the Rotary Photographic Company are about to supply carbon tissue of the correct yellow, pink, and blue shades, coated, not on paper, but on thin celluloid. This will be printed from the back, thus avoiding any transfer: for development, the yellow from the negative taken through the blue filter, the pink from the negative taken through the green filter, and the blue from the negative taken through the red filter. The yellow is developed first, mounted film down on to white paper, and the celluloid stripped away; the red is next mounted on top in exact registration and again the celluloid stripped away; and finally the blue print is mounted in register on the other two, and the celluloid being stripped, the result is the finished three-color print on paper. That seems extremely simple, and indeed excellent results have already been produced. It will be cheap as well as good, and has the advantage that it is a process, viz., carbon, with which the professional photographer is already quite familiar.

The second process is also as simple, or simpler, will be cheap, perhaps even quicker, and the results, given the three correct negatives, almost, if not quite, as good. It is quite a new process, though it will be well within the abilities of the photographer's youngest assistant. This is the method about which the daily newspapers recently had the paragraph announcing once more the discovery of photography in natural colors, that periodical 'discovery' which always turns out to be a mare's nest, at any rate in its literal meaning. Nevertheless, this is a step in advance in printing process, and is the invention of Dr. Koenig of Messrs. Meister, Lucius & Brüning, who will be remembered by our readers as the inventor of the remarkable sensitising dye which he has called "pinachrome." He takes a piece of white paper (preferably a baryta-coated paper), and coats this with collodion to which has been added a small quantity of the "leuko" compound of a dye. These "leuko" compounds are themselves colorless, but on exposure to light become colored, so that paper is coated with the collodion containing the "leuko" compound that is turned blue. This is placed under the negative taken through the red filter and allowed to print out until it is judged sufficient, when it is fixed for five minutes in acetic acid, washed for five minutes, dried, and then the same paper again coated, this time with the collodion containing the "leuko" compound that will be turned pink under the action of light. The negative taken through the green filter is now placed on the print, the presence of the blue image makes registration easy, and this is printed out, fixed, washed, and dried, and a similar procedure followed for the yellow print when the print is finished. The question that will at once be asked by the collodion worker is, how is it the upper layers of collodion do not dissolve the lower when poured on? We do not know; all we can say is that we have seen excellent results produced by the method, and when it is on the market, it will be worth the professional photographer's attention, for, with the exception of the simple operation of coating the paper, the process is simpler and quicker than ordinary silver printing.

An Illustrated Lecture on the elements of pictorial photography has been prepared, at the request of certain photographic societies, by the editor of *The Photogram*. It is not at present available for circulation amongst societies, but the editor is prepared to arrange for its delivery (subject to his other engagements) to a few societies which are prepared to pay actual out-of-pocket expenses, and to guarantee a well-arranged meeting, with a good lantern and lanternist.

Digitized by Google

DECORATIVE PHOTOGRAPHY.

Competition No. 10.

1st prize (£1 1s.), "Orlando" (R. Mackay, Leeds). 2nd prize, withheld. Honorable Mention: "HCl" (W. Foster Brigham, Scarboro'); "Ivo" (Ivan W. Strawson, Paris); "Original" (Austin K. Hanks, New Jersey, U.S.A.); "Holly" (E. W. Jackson, Hale, Altrincham).

WITH the exception of the study by Mr. Mackay, reproduced on page 309, we cannot say much for the decorative value of our competitors' work this month. Mr. E. W. Jackson's combination of a winter landscape, in a frame of holly leaves and some appropriate pen and ink ornament, is good, as his work always is, but is scarcely pure photography. Mr. Foster Brigham submitted several appropriate suggestions, and had his examples been more carefully done, we could have made an award to them. A number of other competitors need to realise what decoration is and requires, and that the decorative framing of a number of prints is quite a different thing from using prints in decoration.

Mr. Mackay's success places him with ten marks to his credit in the series scoring, we having omitted to include one honorable mention in the marks last month. The others are: W. Foster Brigham, 9; Clarence Ponting, 6; A. J. Loughton, 5.

The "Seashore" subjects should reach us on Nov. 1st, and the Outdoor Portraiture Competition closes on Nov. 26th, not Dec. 1st, uniformly with other competitions, as *The Photogram* for January, 1905, goes to press a week earlier than usual. Some notes on Outdoor Portraiture appear on page 299 this month.

For Charity's Sake.—In reference to the article on page 256 of the September issue, we have had much correspondence, including most handsome offers of support from certain of the manufacturers, "*on condition that we can be assured that those for whom the benefits are mainly intended—the professionals—show that they are taking their fair share in the work.*" This seems likely to be the case, as the Professional Photographers' Association has arranged for this to be the principal subject of discussion at its meeting on October 21st, and has asked H. Snowden Ward to lay certain facts in reference to the work of the old "Benevolent" before the meeting.

The Year's Pictorial Work.—New work and new workers are more fully represented in *Photograms of 1904* than in any issue of this Annual for several years. There is an interesting collection from the recently formed Salon Club of America, with article by Sadakichi Hartmann; about a dozen from Western Americans, with article by Fayette J. Clute, editor of *Camera Craft*; a dozen good things from the Scottish Salon, with an appreciation amongst the "Work of the Year"; one or two new, strong Germans, and a few new men from Australia and from British Columbia, with articles by J. Hill-Griffiths and H. Mortimer Lamb respectively. The older men are not forgotten. Demachy, stronger than ever before, has three pages, Keighley is represented by two of his best works, Hinton's masterpiece—"Niagara"—is well reproduced, Percy Lewis has two pages, and there are the year's best works by Crooke, Craigie, H. Walter Barnett, Mrs. Barton (three pages), Archibald Cochrane, Davison (two), Fredk. H. Evans, Hollyer, Mummery, Puyo, Ralph Robinson, Warburg, Le Bègue, the Hofmeisters, Dührkoop, Gash (two), Greatbatch, Grindrod, Hensler, and many others. The medalled pictures of Marshall, Mortimer and Boon are included, and altogether the issue seems unusually full of interest. It should be on sale by the time these lines appear.

Sun-printed Fruits are forming a nine-days' wonder at the time of writing. Fashionable fruiterers are offering apples decorated with floral designs or portraits of the king, the morning papers are booming the idea, and some apple-grower is probably chuckling over his astuteness in taking a leaf out of the French book,—unless, indeed, the fruits are "made in France." The method of production is thus described in *Rustic Minor Arts*, an interesting sixpenny book issued by our own publishers:—

"Flowers, leaves, and fruit obtain their color under the action of sunlight, so that a photographic print may be made by protecting a part of any of these sensitive surfaces from the sun. In France, and especially about Montreuil, apples are largely grown with monograms, crests, or mottoes. In other parts of the Continent decorated fruits are grown for the fair-days, with designs representing the patron saint of the fair or some local emblem. The method is very simple. When the apples are growing, and before they have begun to color, those to be decorated are enclosed in paper bags which keep off the strong light and cause the fruits to remain pale green. When the fruits are full grown and ready for ripening, new bags are adjusted, fitting tightly to the fruit, and having the design that is to appear on the fruit cut as a stencil through the paper. The

Digitized by Google

ripening then gives the effect of a red design on a green skin. The reverse effect is obtained by cutting out the design from opaque paper and gumming it to the fruit, with the result that the design remains green on a ground of red ripeness. Rhubarb, cucumbers, vegetable marrows, melons, etc., may be decorated in much the same way. It is necessary to choose suitable subjects, and amongst the leaves some of the evergreens, such as laurel or the 'Indiarubber plant' of the greenhouse, are most easily worked. For a motto or series of words a stick of rhubarb or a cucumber offers an ideal surface, and by growing it, first without much light and then under a mask or stencil, the decoration can be easily carried out. A dish of tomatoes decorated with monograms makes a most attractive present for one who appreciates that wholesome fruit."

The fruits on sale in London appear to have been decorated under negative prints, not under stencils.

FORTHCOMING EXHIBITIONS AND COMPETITIONS.

Particulars of Exhibitions are given when first announced, and again when it is time for entries to close. Will secretaries who wish insertion please mention details below, and note that last day is 12th of each month for publication on 25th? The Editors will feel grateful for the Exhibition catalogue as soon as published.

En.=Entries. Pic.=Pictures. Ex.=Exhibition. G.=Gold Medals. S.=Silver Medals. B.=Bronze Medals. O.C.=Open Classes. Sec.=Secretary.

(1) *The Scottish Salon* (confined to photographers in Scotland or to Scotsmen residing elsewhere).—En., Dec. 31. Pic., Jan. 6, 1905. Ex., Jan. 14 to 28. Sec., W. A. Frame, 28 Bank Street, Hillhead, Glasgow.
(2) *Glasgow Eastern A.P.S.*—En., Nov. 14. Pic., Nov. 16. Ex., Nov. 26 to Dec. 3. 3 O.C. S. and B. Sec., John Brough, 68 Dalmarnock Street, Parkhead, Glasgow.
(3) *Sheffield P.S.*—En., Nov. 5. Pic., Nov. 14. Ex., Nov. 21 to 26. 6 O.C. S. and B. plaques. Sec., James W. Wright, 62 Vale Road, Sheffield.
(4) *Hackney.*—Ex., Nov. 9. Sec., Walter Selfe, 70 Paragon Road, Hackney, N.
(5) *Darwen P.A.*—En., Nov. 10. Pic., Nov. 15. Ex., Nov. 17 to 19. 6 O.C. S. and B. Sec., J. G. Thomas, Fern Cottage, Lough Road, Darwen.
(6) *Lantern Slides* (*Amsterdam A.P.S.*).—11 Classes. Sec., J. P. Goldkoop, hoek Spui en Handboogstraat 2, Ansterdam.
(7) *Hartlepool Industrial Exhibition.*—En., Nov. 9. Pic., Nov. 19. Ex., Nov. 21 to 26. 5 O.C. G., S. and B. Sec., Geo. Scott, 30 Cobden Street, West Hartlepool.
(8) *Braintree C.C.*—En., Oct. 31. Pic., Nov. 12. Ex., Nov. 17 to 18. Sec. W. P. Dreaper, Coggertall Road, Braintree.
(9) *Ipswich C.C.*—En., Nov. 8. Pic., Nov. 19. Ex., Nov. 22 to 23. Sec., R. H. Sutton, 37 Henley Road, Ipswich.
(10) *Isle of Thanet P.S.*—En., Nov. 5. Ex., Nov. 21. Ex. 24 to 25. Sec., G. W. Simmers, Aberdeen House, Ramsgate.
(11) *Hove C.C.*—En., Nov. 14. Pic., Nov. 18. Ex., Nov. 23 to 26. 5 O.C. Sec., A. R. Sargeant, 55 The Drive, Hove.
(12) *Ilford P.S.*—Ex., Nov. 25 to 26. Sec., W. N. Beal, 155 Thorold Road, Ilford.
(13) *Southsea P.S.*—Ex., Dec. 2 to 8. Sec., F. J. Lawton, 20 Clarence Square, Gosport.
(14) *Muirkirk A.P.S.*—Ex., Dec. 8 to 10. Sec., W. Barrowman, Ayr View, Muirkirk.

Manufacturers sending apparatus for examination and notice should state distinctly whether, and when, they wish it returned.

Catalogues, Price Lists, and Descriptive Pamphlets.—*R. R. Beard*, 10 Trafalgar Road, Old Kent Road, London, S.E. Supplementary list of lanterns, jets, etc.

Houghtons, Ltd.—Magic lanterns, enlargers, model engines, etc.

Ornamental Corner-pieces for mounts are a new introduction of Mr. Tylar of 41 High Street, Aston, Birmingham. They are of thin flexible gilt metal, and are affixed simply by pressing on to the mount. Price per box 1s. 1d., post free.

The Majorca Lantern Lecture issued by Messrs. Elliott & Sons, Barnet, is proving a popular fixture with societies — at least several secretaries have recently specially mentioned it to us as having awakened the interest of their members in the varied tones obtainable on a lantern plate.

The "Luna" Competition has been postponed for a few weeks, but all prints must reach Messrs. Lucien Allegre, 59 New Oxford St., London, W.C., by Nov. 10th at the latest.

How to Enlarge and make lantern slides. On another page we specially enforce enlarging as a process neglected by the photographic beginner from false notions of its difficulty or expense. If we wished to put into the simplest and most concrete form the advice we give there, we could not do better than quote a pamphlet "How can I enlarge," issued by Messrs. Butcher, Camera House, St. Bride Street, London, E.C. There is no need for us to do so, as Messrs. Butcher offer to send it post free to any reader of *The Photogram*. It explains how to enlarge in day or night time, and how to utilise one's camera for enlarging purposes. It includes also a description of the remarkably inexpensive apparatus supplied by Messrs. Butcher, among which we would select for mention the daylight folding enlargers, and the series of enlarging lanterns at such moderate prices as £2 2s., £2 15s., and upwards. Enlargers have always been a strong line at Camera House, but these instruments are triumphs of Messrs. Butcher's persistence in supplying a much-needed apparatus at a most moderate price.

The lantern list of the same firm describes many accessories for slide-making and slide exhibition which are probably unknown to many of our readers, as certainly some of them are new to ourselves, although we have acquired most of the "Primus" accessories since the early days when they were laying the foundations of the large business Messrs. Butcher now conduct.

Digitized by Google

Figure Composition is the subject No. 64 of *The Photo-Miniature*, and one of the most readable of the series, as it is certainly one of the most valuable to the photographer. The author, Henry R. Poore, starts with the basic fact that a person infrequently looks like himself, and draws lessons from the painters for the benefit of the portrait photographer.

Fine Ground Glass.—Mr. Tylar, 41 High Street, Aston, Birmingham, ceaseless in his enterprise, has supplied another "long felt want," viz., a focussing screen of finely ground glass. The transparency and fineness of grain is markedly superior to ground-glass as ordinarily supplied. The glasses are sold as "Micrograin," at the following prices:—quarter-plate, 3d.; 5×4, 4d.; half-plate, 6d.; ¼ plate, 1s. each; postage extra.

Xmas Mounts.—Each year brings forth from certain firms mounts to be used as Xmas greetings, in such number and variety that a review of them becomes more and more difficult. Fortunately we can excuse ourselves to a large extent, as illustrated lists of the mounts are available, or sample packets can be obtained. This holds good in most cases. We may now select for individual mention a few of the mounts sent us by the leading vendors.

H. & W^e^ Green.

(Percy Street, Rotherham.) — One very choice mauve card is the "Secession" (No. 18), a double card with 2½-in. circle cut-out. Price 2s. per dozen. No. 554, for Brownie and Scout print, is dark green with gold lettering. 1s. 6d. per dozen. "The Medallion" (324), for quarter-plate prints, is a design in dark blue and brown on a grey board edged with white. It is quite one of the best of Messrs. Green's cards, and in very good taste. 2s. per dozen. Messrs. Green print private greetings on any of their cards.

Wm. Tylar.

(41 High Street, Aston, Birmingham.)—The best selection of delicate ornamental *white* mounts that we have seen, and in great variety. White with a little gilt lettering and a scalloped edge; white in virginal purity with nothing but a little embossing to relieve it; white with the embossing a little more elaborate, but still reserved and neat. These mounts are called the "Unique," and twelve of them with envelopes to take them cost 1s. 8d. from Mr. Tylar.

Marion & Co.

(Soho Square, London, W.C.).—A large descriptive list is issued, as the variety of cards, large and small, require. We picked out three of the latter which we like very much for tiny prints. One is H 156 for circle prints, 1⅞ in. diameter. It is a grey mottled linen, stamped, in blue relief, "All good wishes." 1s. per dozen. H 7, a blue card with red lettering, and space for a print 1½×1, costs 10d. per dozen. H 181 is a single card of the slip-in class, with oval opening for a print, 1¾×1¼. White relief letters on a blue background, 10d. per dozen.

Jonathan Fallowfield.

(146 Charing Cross Road, London, W.) — The 42-page list of this firm fully illustrates the variety of designs, but, unfortunately, not the excellent coloring and pleasing textures. Mr. Fallowfield leads the way in both these matters, and we have nothing but unstinted praise for such elegant cards as his Palmyra (gold and brown), Kandia (red, white, and gold), or Britannia (green and white). The last named is a book card consisting of a white double-folded slip-in mount, and an outer cover of green, the whole bound with a light green ribbon, and simply inscribed "With the Compliments of the Season." In quite different style is Rafaila, a white card bearing an ornamental vignette. Another pretty card (No. 529) is for circle prints 1½ in. in diameter, and bears an embossed ivy design, being likewise bound with a green ribbon. Mr. Fallowfield's list, sent free, will give particulars and prices.

Houghtons Ltd.

threaten to outdo their records of previous years in ornamental and inexpensive cards. Their 24-page illustrated list will give a fair idea of the designs. One strong line is the Photo-calendar which with a print inserted makes a really useful present. The prices run from 3s. to 5s. 6d. per dozen.

The Acme of Simplicity in printing papers is surely reached by "Zigo," a new introduction of Messrs. Thomas Illingworth & Co., Willesden Junction, N.W. Zigo is printed fully out, and is then fixed and toned simultaneously in hypo solution, into which the prints are immersed without preliminary washing. A short time of fixing (six minutes) leaves the print with a red tone; longer treatment gives a brown or purple tone, and after fixing, the prints have only to be washed in several changes of water for half an hour. Zigo comes to us, matt and glossy, in sheets, 3d., 6d. and 1s. packets, in gross boxes, and in postcards of 5½×3½ and 3½×2¾ in. The prices are on the basis of twelve quarter-plate pieces for sixpence.

The Beck-Steinheil Unofocal Lens.—Messrs. R. & J. Beck send us one of the new anastigmats due to the optical genius of the Basle firm of Steinheil. It is of the *f*/6 series, and we find it to actually work at this aperture, covering the half-plate, for which it is listed completely to the corners. The definition at this aperture may be judged from the following figures:—There is no astigmatism throughout the field to 29°. At 5° the image is on the line, at 10° it is ·05 away from the line, at 15° it is ·07 away from the line, at 20° it is ·03 away from the line, at 25° it is ·02 away from the line, at 29° it is absolutely on the line, after which it falls off rapidly. Messrs. Beck inform us that the *f*/4·5 series is equally good, and gives microscopic definition in the centre of the field. These results will show that while answering to all the calls likely to be made on a modern lens, the Unofocal is specially suitable for high-power telephoto work, and tried with an attachment magnifying eight diameters, the definition was still perfect.

The circle of illumination of the lens is 12 in., so that a 9×7 plate is covered at *f*/22, when the lens is placed centrally.

The Zeiss "Minimum Palmos" Camera.—In offering a folding focal-plane hand camera to photographers the firm of Carl Zeiss have a great reputation to live up to. Mechanical perfection, as well as scientific design, distinguishes the Zeiss lenses, and the photographer will demand the same qualities in the totally different field of camera construction. The series of cameras of which the Minimum Palmos is one is Messrs. Zeiss's answer. And the reply is one which should satisfy those who have learnt to prize a Protar or Unar as one of their most valued possessions. In the "Minimum Palmos" the makers have reduced movements to the minimum, and its name is no misnomer. That is a feature upon which a German maker should be specially congratulated—German mechanism tending to elaboration and multiplicity of movements. The camera is pre-eminently one to be used and carried in the hand, though it can be fixed on a stand for both "upright"

and "oblong" pictures. The quarter-plate size has an extension to take a lens of about 5½ in. focal length. The movements are three in number:—a winding key for the shutter, which also controls the width of slit, a winding key for the spring of the shutter, and the focussing mount of the lens. To describe the shutter first. When fully wound the width of slit is shown opposite a brass stud; the tension of the spring is likewise shown. A series of conjunctions of these two factors gives a range of speeds from $\frac{1}{25}$th to $\frac{1}{1000}$th second. The adjustment of the slit is made in a second or two and from the outside of the camera, but it must not be made while the shutter is wound.

For the rest the camera is light but strongly built, and made entirely of a light metal. It has a rising front, which, by a turntable attached to the front, is available either way of the plate. It can be used with dark slides or with the Palmos roll-holder, both these registering with the focussing screen as supplied. Complete with Unar (*f*/4·7), three

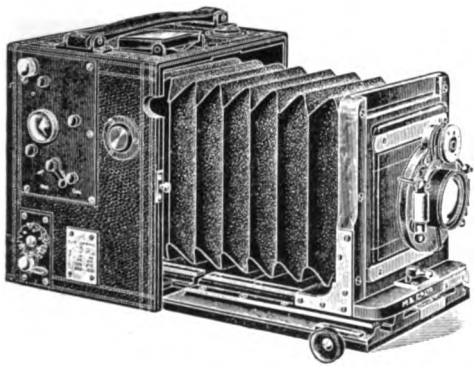
Digitized by Google

double slides and leather case and strap, the quarter-plate instrument costs £15; the 5×4, £15 7s. 6d. A simpler and more convenient folding hand camera it would be difficult to desire, and Messrs. Zeiss's name is a sufficient guarantee of the accuracy of the adjustments.

Pigment Paper.—An improvement in the "Crossed Swords" ready-made gum paper which we noticed last month has been made by the inventor, who has found that the acetic bath may with advantage be substituted by immersing the print in tepid 6 per cent. solution of soda bicarbonate, which is not only simpler in use by reason of its not requiring to be kept at a given temperature, but it removes any possibility of rotting the pigment and so losing some of the finer detail, which was a danger with the acetic acid bath. The resulting print is also softer in appearance and not so inclined to contrast. The prints may be handled in larger quantities, and may be left in the bicarbonate solution without danger of deterioration.

The paper is supplied by Messrs. Chas. Zimmermann & Co., 9 & 10 St. Mary-at-Hill, E.C.

A Handsome Focal-plane Camera.—Messrs. Marion & Co. of Soho Square, London, W., have produced a folding camera fitted with the new Kershaw focal-plane shutter. In so doing they add another to the testimonies of the "focal plane" as *the* shutter for every kind of work, and they also embody it in an apparatus worthy of such universal application. The Soho is a folding camera for use in the hand or on a stand, but it is not of the light build commonly adopted for instruments of this type. Strength and rigidity before excessive lightness has been the motto of the manufacturers, and as a result they have produced a camera fit to be placed in the hands of those who want it for hard wear, maybe in the corners of the globe, who want it for all manner of subjects, and who want to have it in perfect working order as years go by. The design and construction of the camera are a reasonable guarantee that it fulfils these



The Soho Focal-plane Camera. Leading features: Rigidity and solid build; long extension; external adjustments of focal-plane shutter. Shutter release presses camera against the body.

requirements. One important point is the rigidity with which the baseboard is held in position, a special form of hinge, and a new side strut, making it practically one with the back of the camera. This feature, we need hardly say, is one especially necessary in a camera to be used with the lens at a large aperture. The lens front also is solid in itself, and locks rigidly in position. The shutter has adjustment of slit and spring tension made from the outside, and gives exposures from $\frac{1}{10}$th to $\frac{1}{1000}$th of a second. We learn that the various speeds have been confirmed by three separate authorities with satisfactory concordance. Another point greatly in favor of the shutter is the slight projection of the external knob; it is not likely to get damaged in use.

Any lens can be fitted, with or without an additional shutter, and a focussing scale is provided. In these matters the makers aim at suiting individual requirements. The extension, 12¾ in. from plate to lens panel, gives them great latitude in this direction. Altogether we are glad to find a camera of such excellent qualities introduced, and the feeling should be intensified by the fact that it is English-made throughout. The Soho costs £10, in quarter-plate size without a lens. This includes three double dark slides and black leather case. In 5×4 size the price is £12; in half-plate, £15.

Bayer Products—edinol, acetone, sulphite, etc., and the recently noticed printing papers—received the highest award at the recent Congress of the German Photographic Union.

Owing to the increased business in the photographic papers of the Rotary Photographic Co., Ltd., they have found it necessary to appoint Mr. Chas. J. Miller to relieve Mr. W. A. Sims of the business management; Mr. Sims continuing the technical management (including demonstrating) of this department.

"The First Mercury Vapor-Lamp to be utilised commercially on the Pacific Coast was installed a month ago by Messrs. Hirsch & Kaiser in their printing rooms (says *Camera Craft*). This lamp, owing to the peculiar quality of the light, yields a fully timed Velox print in half a second and a Solio or Aristo print in four minutes." The British source of information as to the lamp is The Westinghouse Co., Norfolk Street, London, W.C.

Midgets from Quarter-plate Negatives.—A useful piece of apparatus for the making of nine midgets on a single half-plate piece of bromide paper is supplied by Messrs. H. & W. Green, Percy Street, Rotherham. These small prints, 1½×2 in., should be used by many of our professional readers during the Xmas season, as they are very suitable for insertion in cards of greeting. As the making of the prints with Messrs. Green's camera is an operation which a boy can be put to, and as even a wet negative can be used in the apparatus, the work can be got out of hand quickly and cheaply, two points of some importance in such business. The price of the Midget Camera, complete with nine lenses, is 21s. post free. Messrs. Green supply bromide paper, 6½×4¼, glossy or matt, at 10d. per twelve sheets.

The Kodak Competition.—The selected prints exhibited at the Strand Gallery of the Kodak Company, were on view only just as we went to press last month. Several visits since then have increased the interest felt on the first look at the collection. The walls are covered with photograms, many of which are strongly pictorial. Many others, of course, are of great human interest. And the technique of all of them is of an extremely high standard, higher than we have ever seen in a trade competition. Messrs. Kodak, Ltd., are to be congratulated on the credit which their clients have cast on the various Kodak manufactures.

Some idea of the subjects will be gained by several reproductions in these pages. The Kodak Company have likewise published a souvenir of the competition, in which a large number of the winning pictures are reproduced. The exhibition remains open until Dec. 17th.

Inexpensive Light-filters.—Recent improvements in orthochromatic plates have indirectly benefited photographers in one important particular—the inadequacy of light filters for use in the camera and in the dark room has been brought into prominence. In place of filters chosen haphazard from a glass-maker's stock, we have had screens properly adjusted for their various purposes. As a result, outdoor exposures through a screen are greatly curtailed, and the illumination of the dark-room has gained, at one and the same time, in safety and intensity. Dr. Miethe of Charlottenburg has contributed to these advances in no slight degree, and so it is important to note that a series of filters prepared with his assistance have been placed upon the market. Messrs. A. E. Staley & Co., of 19 Thavies Inn, London, E.C., through whom the British market is supplied, have issued a booklet "More Light for the Dark Room," which describes these new filters, and which should be in the hands of all photographers desirous of improving their working methods. The new series, however, includes also filters or yellow screens for exposures in the camera and for tri-color negative-making. They are an innovation in that they are manufactured as thin but stiff flexible films, which can be cut to the size required, and are comparatively inexpensive. Thus a yellow screen, 4¼ by 3¼ in., for use in front of a quarter-plate, costs but 5½d., and a set of three light-filters for tri-color only 5s. The dark room filters are made in seven varieties:—I. (yellow) for wet collodion and chloride plates. II. (light red), V. (light-green), and VII. (brown), for ordinary plates and bromide papers. III. (red) for iso plates, and VI. (dark red) for panchromatic plates. VI., a dark-green filter, is for ordinary plates when daylight is the illuminant, artificial light being used with the other filters as directed above. The filters are sold under the designation "Geka Flexoid," and certain qualities of them should be supported between two sheets of glass. Others—the gelatoid filters—are strong and stout, so that they can be used alone; and further than this, they are insoluble, and not damaged by splashes of water which may reach them. The whole series is one which we can strongly commend, and we can give no better advice than that Messrs. Staley's booklet be obtained and studied.

Digitized by Google

Correspondence

BE BRIEF!—*We reserve the right of condensing all correspondence, but undertake to leave the meaning intact.*

Personalities barred. Whenever a man's opinions are attacked, with mention of the man's name, we wait until a proof can be sent, and the attack and reply published together.

Anonymous letters are strongly objected to, and those which are not ACCOMPANIED *by name and address of writer, for our own information, go into the W.P.B.*

The Photo-Secession and the American Salon.

DEAR SIRS AND MADAM,—Since my arrival in London I have again received many inquiries—you being among those inquiring—about the much advertised "First American Salon." All I wish to say is that for very good reasons—and these not photographic political—neither I as an individual, nor the Photo-Secession as a body, nor the individual members of that organisation, have had any connection with, or will be represented in, the much advertised world exhibition of pictorial photography. The future must show whether this support has been withheld out of jealousy or malice, or possibly only out of self-respect.—Yours truly,

ALFRED STIEGLITZ.

Carlton Hotel, Pall Mall,
London, Sept. 24, 1904.

Mr. Curtis Bell, President of the "American Federation of Photographic Societies," writes:—"I will try to explain our position clearly. The pictorial workers of the first class, in this country, who found themselves unable to obtain any recognition through the Secession, which, to us, appeared to be an exceedingly close corporation, decided to form an independent organisation for the purpose of advancing the interests of pictorial photography, and for the encouragement of fraternal relations, as well as holding an annual Salon of the highest class, at which everyone who can do good work can find recognition. We feel that we are well within our rights in so organising, and had no intention of attacking or interfering with the Secession in any way. We are not playing politics, but merely ask to be permitted to attend to our own business in our own way. We *do* want the co-operation of pictorialists abroad, and hope to be supported in our plan to introduce their work to the most cultured people in all the art centres of this country, as we have arranged to exhibit this Salon in Washington, Chicago, Boston, Philadelphia, San Francisco and Toronto, after the New York exhibition.

"We call your attention to the fact that this is the first time foreign work has been invited to an important American Salon in New York City.—Yours sincerely,

CURTIS BELL."

A New Dark Room.

DEAR SIRS AND MADAM,—If any of the readers of your paper should happen to be in this district, I shall only be too glad to place my dark room at their disposal. I hope you will place this on your list of places where dark rooms are to be had free of charge. If dealers would adopt this plan more generally, I am sure it would be beneficial both to them and photographers generally.—Yours very sincerely,

WILLIAM LORD.

149 Market Street,
Shawforth, Rochdale.

***To Practical Workers.**—The editors are always in search of new contributors to* The Photogram. *Articles are preferred in short series with five or six illustrations, but in all cases the editors prefer to consider suggestions for such series rather than MSS. The status of the writers does not signify in the least, supposing their contributions are on practical topics, are told out of their own experience, and expressed without waste of words.*

Newton Gibson's Method of Candle-light Photography.

The following letter has been with us since March 3rd, having been sent by Mr. Young on reading the article in that issue of The Photogram, *on Mr. Gibson's work.*

DEAR SIRS AND MADAM,—The examples published in March, '04, issue, are similar in the fact that each one shows the candle with an absolutely black background in the immediate vicinity, and also in none of them are the shadows at the exact angle that would result from the candle-flame. Careful examination of the examples lead

By Sydney C. Young.

to the belief that the true source of illumination is slightly above the candle-flame, and in the case of "The Sick Bird" and "The Lesson" also slightly nearer the camera. The "Evening Prayer" shows it a little to the left of the candle as well, and in "The Night Cometh" a shadow is cast upon the front end of box at foot of crucifix. Therefore it is the writer's belief that the "lamp" is itself invisible, and takes the form of a vertical tube, velvet-covered outside, the lower end having a portion cut away from the side furthest from the camera with the inside of the remaining portion acting as a reflector. Magnesium *ribbon* is suspended out of sight of camera. The tube acting as chimney carries fumes out of range of picture.

SIDNEY C. YOUNG.

85 Finsbury Pavement,
London, E.C.,
March 2nd. 1904.

The Process Photogram

contains the whole of *The Photogram plus* the following articles and notes relating to photo-mechanical processes:—

A New Photo-Mechanical Printing Process.
"Process" at the R.P.S. Exhibition.
Color Collotype.
Practical Notes. By J. H. Moger.
Half-tones in Newspapers.
Experiments with Unemulsified Silver Bromide.
A Routing Accessory and a Screen Adjustment.
Testing the Dark Room Light.
Finished Blocks without Handwork.
Reflections and Copying.
Current Topics.

Digitized by Google

Digitized by Google

THE YOUNG RAPHAEL.
By A. Tauxe.

Digitized by Google

THE PHOTOGRAM

VOL. XI. DECEMBER, 1904. No. 132.

JEUNE FILLE À L'ÉCUELLE. *By Guido Rey.*

(See "Critical Appreciations," page 326.)

Digitized by Google

Glycerine development of Gaslight & Bromide Papers

Written and illustrated by Clarence Ponting.

Why not produce vignetted effects on development papers by the glycerine method which we know so well in platinotype? Gaslight paper with all its advantages savors of the mechanical, and if we can adapt it for local control we are adding another to its many virtues. Well, it can be done, and though there are several difficulties in the way they are not insurmountable. A glance at the pair of prints here reproduced will show the kind of effect obtainable. Before referring to them further, let us consider the practical methods of work.

Materials required.—Three soft camel-hair brushes, one a large mop, the other two a moderate size, and fine pencil: glycerine, clean blotting-paper, metol-hydroquinone developer, and fixing bath, all ready for use.

On the table before you place a couple of porcelain dishes containing clean water and another holding the fixer; also a large bowl of water in which to drop the prints as they come from the hypo. Half an ounce or so of the glycerine is placed in a jam jar, the camel-hair mop stirred up in it and then used to give an even coating of the glycerine to a good-sized sheet of glass. This latter is to hold the print flat when developing. We can now expose the paper. The print must be exactly exposed; that is to say, exposure must be such that on development in the ordinary way the paper comes up to the required extent, and no further. A few trial exposures will make sure of this, and it is a very necessary precaution to getting good results by the glycerine method.

Print developed without local control.

Now we must make the print so as to guide us in development. Carefully remove the back of the printing frame *without disturbing the paper.* Press the thumb heavily on to the paper, so that it cannot slip, then hold the negative up to a faint

Digitized by Google

light so that the negative image can be seen through the back of the paper, and with a lead pencil roughly sketch the shape of the vignette required. Having done this—the pencil marks should be fairly bold—remove the print, and, still in a dim light, hold it up with the back facing the light and then *lightly* sketch, on the film side, the rough outline which will be seen on the other side. These marks can be erased with a soft rubber after development, washing and drying, but are a sufficient guide for us in using the brush.

Development itself must be done in a fainter white illumination than usual, or yellow light can be used. The "gaslight" paper has to be handled rather longer than is generally the case, and so extra care to avoid fog is necessary.

We now lay the print, face up, on the glycerined glass, and evenly apply a coating of glycerine to the whole surface with the mop. Every part must be covered. Keeping the mop and blotters close at hand, we now dip the medium-size pencil into the developer and give one or two small circular sweeps about the middle of the pencilled space, carefully watching, with blotting-paper in hand, for the first sign of an image. As soon as this appears, blot off the developer quickly, and smartly smear glycerine over with the mop. Studying this small portion, develop up the remainder with developer, ½ oz., glycerine, ½ oz., with aid of the second brush. In this way much softer effects are obtained, though others perhaps may prefer the developer used alone. Continue blotting-off and re-glycerining the print and then re-developing until the desired effect is obtained. The print, if the edges appear too hard, should be covered with glycerine and the edges gone over quickly with the brush charged with glycerine and developer, blotting off and covering each part with glycerine when finished.

One drawback of the glycerine "gaslight" print must be mentioned at this stage, and that is—double tones. If development is unduly prolonged, the print will be patchy, blue-black in some parts, and greenish in others. The secret of avoiding this effect is to work quickly. Two minutes may be said to be the maximum time of development.

Vignette effect by use of glycerine.

Digitized by Google

The best papers for glycerine development are the matt and rough surfaces. A very rough paper gives excellent effects, and in some cases staining in a strong solution of tea or coffee gives a very rich appearance to the print.

"The Bait Digger," here reproduced, shows the control of which this method is capable. The mass of ugly boats on the left of the figure was subdued and in part removed. The distant cliff also, which is too strong, was lightened, by developing it only until a suggestion of it appeared. Further progress was arrested by the glycerine, but it is well to remember that *some* further action always goes on and must be allowed for.

The foregoing hints have been made with gaslight papers in mind; but except that the lighting of the dark room must be fitted to the greater sensitiveness of bromide paper, and that the choice of developers is larger and the time during which they can be permitted to act is longer, the instructions here given apply with equal force to bromide papers.

TWO CONTINENTAL PICTORIALISTS.

HERR ALFRED ENKE, of Stuttgart, whose work we prominently reviewed last year, is to be one of the two "foreign" exhibitors at the Scottish Salon next January. The other "foreigner" (we thank our Scotch friends for the quotation marks, which are entirely theirs) is Mr. Alexander Keighley of Yorkshire! Of Herr Enke's work the Salon secretary writes:—

"It has never, as far as I know, been exhibited in Britain, the only examples seen having been some reproductions, but these, even allowing for the loss of quality in the half-tone replicas, have been of so striking merit that the advent of his pictures will be eagerly looked forward to. It is evident that he stands on a plane by himself, working out his own ideas independent of critics. I understand that Herr Enke is making an extra endeavor to make his exhibit a really characteristic one, the pictures being not only specially selected but also specially framed."

We can well believe that both foreign exhibits will strengthen the Scottish Salon, and Mr. Maclachan has our congratulations in being the first to introduce Herr Enke to the exhibitions.

Quite distinct from Enke, who is persistent in his pictorial strength, is another continental worker, A. Tauxe, a piece of whose photography we present this month as a supplement. M. Tauxe is spasmodic, but, whenever he will, he can take a prominent place among the pictorial workers. He has done a good many still-life subjects, infusing a certain strong character into them, and we only put aside our intention to reproduce a number of them by reason of the difficulty of effective reproduction. His "Young Raphael" is a good instance of the arrangement of two principal masses (face and hands) within a space; and also of the use of a strong lighting in emphasising a face and attitude, while keeping all surroundings subdued. One may quibble at the pose of the right hand, which grasps the brush as no painter would do, and one may even suggest that the hands and brushes taken together suggest the handling of reins, but this is rather in the nature of hypercriticism.

Digitized by Google

A STAND CAMERA IN THE HAND

How, at small expense, to convert the stand camera into a high-class instrument for the hand.

THE worker who has had some practice with a stand camera and is impelled towards hand-camera photography as the only way to tackle the most attractive subjects, viz., those of life and movement, need not forthwith rack his brains to decide which is the best hand camera at a price. He can do as I did, and convert his own stand instrument for use in the hand. He will not need to thereby impair it in the slightest for use on the tripod. He will make a shell or case in which to disguise and protect the camera, and facilitate its ready use without focussing on the ground-glass. Unless one is a specially good hand at simple cabinet-making it is better to get one's joiner to do the job, if he is a man who will let you look in as he goes on and permit suggestions as the work progresses; it is not difficult to overlook little details when sending him the sketch of what is wanted.

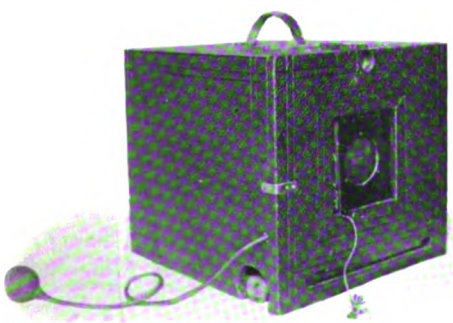


FIG. 1.

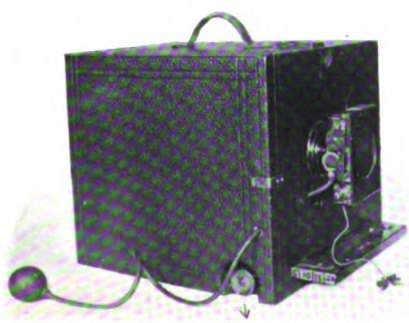


FIG. 2.

The shell consists simply of the framework seen in fig. 3, open at the back and with a door in front to permit the passage of the lens and shutter when the camera is racked out. To fix first of all what size this frame has to be, set up the camera on its tripod out of doors and carefully focus an object 50 ft. away. This distance is better than a much greater one, corresponding more exactly with "infinity," as the extreme distance is only very slightly out of focus, and objects in the foreground are better defined at a given aperture of the lens. With some cameras the focussing will be done forwards; with some few others by racking the ground-glass to the rear. Whichever it is, the position so found is that for which the shell has to be made. Make your sketch, and resort to your joiner. The case must come flush with the baseboard in front, and allow the camera to project slightly in the rear. In making the box the chief points are to get it light and

Digitized by Google

as small as possible. The tendency of the average workman is to "make a good strong job of it," without at the same time making a good strong job of you who are going to carry it about. Wood of quarter inch thickness is strong and stout enough for a camera as large as half-plate, and I do not suppose that the most zealous of my readers is likely to adopt a larger instrument than this for use in the hand.

A still more necessary precaution is to make the shell hug the camera in the closest manner. Projecting screws, etc., must not be inside the shell if there is any practical way of piercing it, so that those on one side at any rate can be brought flush with the outside of the enclosing box. I speak feelingly, for by omission to look after this with sufficient care, a case for a camera of my own is an inch larger all round than it need have been. The camera is fixed in the shell with a tripod screw, or with a screw of the same thread, but with the head flat so that it will lie flush with the case and permit of the camera standing flat on the ground.

The front of the box is pierced as the fittings of the camera require, but it should not be necessary to have more apertures than shown in the figures. It is fitted with a "snap lock" and a strong pair of hinges. One aperture, it will be seen, is for the finder, which is a necessary addition to the instrument. A very good finder of the brilliant type can be bought for about 7s. 6d., and should be fixed straight over the lens.

The camera must project far enough from the open back for the dark slides to be easily inserted, and it may be necessary to have thumb-holes cut at the top and side to enable the shutters of the slides to be easily drawn.

It only remains now to cover the case with cloth or leather, and to graduate the baseboard for focussing purposes.

Supporting the camera out of doors, focus on small objects 5, 10, 15, and 20 ft. away, measuring these distances. The position of the baseboard is marked in each case by a line against the edge of the box as shown in fig. 2.

The good reader must not expect by this plan to get a hand camera which will rival the pocket instruments in portability. The camera is bound to be rather bulky. But it will be a thoroughly serviceable hand camera with movements which only the most expensive instruments possess. The fact that the plates are held in dark slides is no drawback at all to it. The worker may afterwards wander far and wide among mechanical changers without finding anything better than the old-fashioned dark slide which will never play him tricks, and which lays a restraining hand on the indiscriminate firing-off of plates in hand-camera exuberance.

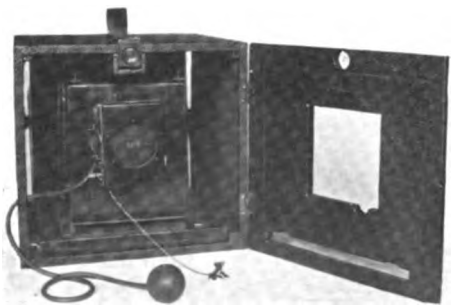
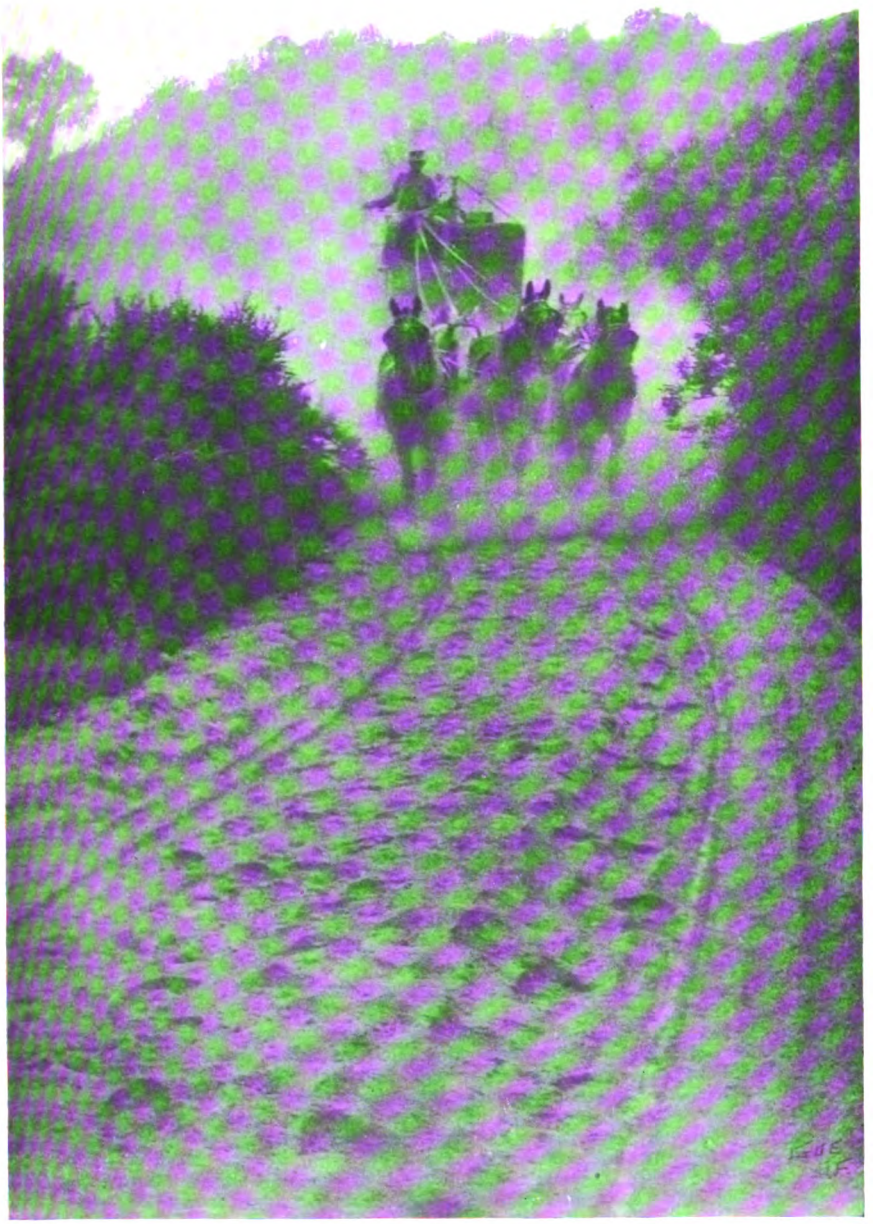


Fig. 3.

Digitized by Google



THE MOUNTAIN ROAD.

By Charles A. Goe, San Francisco.

One of 150 pictures reproduced in the account of pictorial photography given in *Photograms of 1904*, just published.

Digitized by Google

Critical Appreciations

THE WORK OF GUIDO REY IN STRONG LIGHTS AND SHADOWS.

Guido Rey, a very capable and individual photographer, of Turin, is practically unknown in England, but is likely, if he will but allow his work to be seen here, to be greatly appreciated and admired. In at least three distinct lines of figure work he has had great success: his first, and perhaps his happiest field being in the treatment of soft schemes of tone, in full light. Costumed figures, with wealth of gauzy muslin, and soft grey fabrics, in attitudes suggesting prayer, adoration, the first communion, and similar religious ideas, have been made the subject of very full study. In many cases the lighting was a strong one from the far side of the figure, giving exquisite plays of lights through the translucent fabrics, and richly detailed shadows in direct contrast with them. In other cases muslin-curtained windows form part of the essay, and are triumphantly rendered at the same time as shadowy corners of the interior, and the shadowed side of the figures.

To the nude was probably a natural step, and to undraped studies Signor Rey has devoted much attention: without, as we think, such success as attended his earlier work.

A third style, and the one in which we believe that Signor Rey is most interested at present, is represented by two examples in this issue of *The Photogram*. There is still the same problem as in the earlier work: strong light (in some cases direct sunshine) sharply contrasted with a mass of shadow which is strong without being at all hard. The detail in the shadow forms an important part of the picture, as in the faces of the two girl sitters, and the arrangement of the lights around this portion is such as to give the shadow detail full weight and importance. In this later work, abandoning the schemes with many planes and infinite gradation, the strong lights and shadows are disposed in bold masses, and with very great success.

Changes in "The Photogram."

The next issue of *The Photogram*—the first of the twelfth year—will mark certain changes in the production of the magazine which we believe will be appreciated by our readers. We shall adopt a slightly larger page, and each month devote more pages than we have done hitherto to articles and illustrations. In doing this, we believe we take our readers' view of *The Photogram* as a magazine of lasting interest. We do not aim at reporting photographic news which in three months may have lost any interest it ever had, but we do aim and shall continue to aim at recording definite progress of any kind. That we shall be able to do more thoroughly and at the same time shall have the space for the simpler guidance which many of our beginner-readers ask of us. In making these changes we thank our friends for the support which enables us to give them a magazine better in every way and of greater practical usefulness to themselves. Our fresh endeavors, we hope, will fix *The Photogram* still more firmly in their favor as "*the* photographic monthly."

Digitized by Google

GIRL READING.
By Guido Rey.

Digitized by Google

THE
JOHN CRERAR
LIBRARY

Digitized by Google

THE PORTRAIT AND THE STUDIO

IX.—ELLIOTT & FRY AND THE "INVITATION" PORTRAIT.

In previous issues:—The work of Fredk. Hollyer, B. J. Falk, Harold Baker, C. H. Braithwaite, W. Scott, C. H. Evans, H. M'Michael, Pirie Macdonald, Mrs. Käsebier, Martin Jacolette, Hollinger, and Misses Garstin and Antrobus.

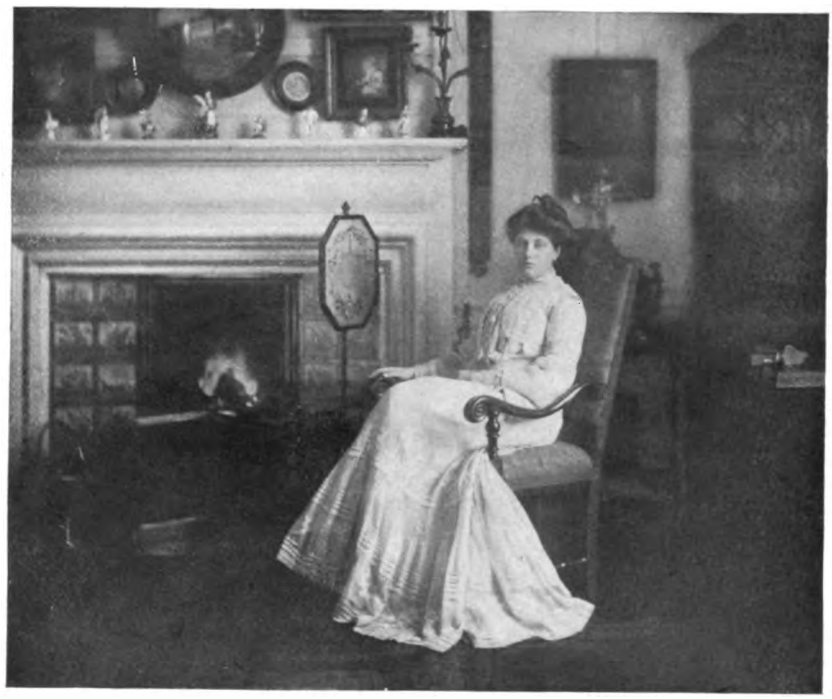
Copyright by The Photogram, Ltd., England.
Copyrighted 1904 by Tennant & Ward, New York.

Portrait by Elliott & Fry.

LET me begin with a confession. When I visited Elliott & Fry I was really more interested in certain business matters and some of the politics of the profession than in actual studio arrangement, lighting and posing. I wanted to interview Mr. Ernest C. Elliott upon "invitation" pictures and certain kindred topics, but he preferred not to be drawn, and, like his late father, he is essentially a business man. The firm of which he is now the head has the reputation of having paid out a larger sum in actual earnings than any photographic portrait business in the whole history of the profession, and this is probably true, for it has always been directed by the same alert and able management which established the successful "Barnet" business in plates, papers, carbon tissue and carbon printing. Like many other men who have made great success, the late Mr. Elliott owed much to his power of selecting assistants and associates, and one need not do more than refer to the fact that the late C. E. Fry and the late Thomas Fall both began their London experiences with him.

To-day, the business is unique, as it has been at almost every stage. It specialises strongly, and specialises mostly on lines to which other photographers give little attention. Much of its work is on portraits in series, for illustration of books and periodicals, and for this purpose it is necessary to keep up to date those enormous collections of negatives originally made when the sale of cabinet silver-prints of "celebrities" was an enormous and a profitable business. For this purpose invitations must be given in many cases, and this firm differs from many of those who do "invitation" work, in that it does not offer any free prints or proofs to the sitter. This is made quite clear in the letters of invitation. Further, when a sitter cannot be induced to visit the studio, or when for publication purposes it is specially desired to secure him in his home surroundings, only the pictures actually needed are taken. There is no photographing of other members of the family "on spec," and if the celebrity wishes to have views of his house and

Digitized by Google



HON. MRS. ALFRED LYTTLETON. At-home portrait (copyright) by Elliott & Fry.

his wife, his men-servants and maid-servants, his ox and his ass, and anything that is his, they have to be made the subject of a definite order, in the regular way of business. The "at home" class of work, originally undertaken for publication purposes, has become a great specialty of the firm, and is very popular with many of its customers. Some people cannot or will not go to the photographer's studio, and even those who have had many satisfactory sittings are usually delighted when they see their first portrait in their familiar home surroundings. Not only does this method entirely solve the problem of backgrounds and accessories, by surrounding each sitter with exactly what is familiar and congenial, but the mental attitude of the sitter is better; and easy, unrestrained poses are much more readily secured. Variety is possible, both indoor and outdoor lightings may be used, ladies can conveniently change their costumes, wearing a different gown for each pose in a sitting, and it is so much easier to bring together a whole family for groups large and small. An operator who has really studied this special field can quickly judge the possibilities of any room or house, and should seldom fail of good effects. In fact, good "at home" portraiture gives those incidental details which have often caused sitters to say that portraits made by their amateur friends are "so natural," combined with the technique which makes professional work more acceptable.

From "at home" portraits in the usual style, and from sportsmen's portraits and sporting pictures made outdoors for the publishers, Elliott & Fry have moved forward to a style of work which they call "Pastime Portraits," and which combine the advantages of many styles of work. To produce even one really fine picture of this class is an expensive matter,

Digitized by Google

but the result is such as to well repay the labor, and to be sure of great appreciation. The mountaineering portrait of Clinton Dent, Esq., is a good example of the class of work, and is selected from the recently published book entitled *Fifty Leaders of British Sport*. These portraits combine the studio pose and lighting with surroundings which are much more satisfactory than those of the outdoor snapshot, because in each case they are, or may be, typical scenes which could not be visited by the photographer and sportsman. To be satisfactory, the surroundings must be drawn by an artist who has some knowledge of the sport, for the true sportsman objects to nothing more strongly than incorrect handling of the technical details of his pastime, which would subject him to ridicule. A horseman preparing to mount the wrong side of his steed, a yachtsman with a background showing boats that could not be sailed, or any other sportsman surrounded by weapons or implements of impossible or obsolete pattern, is not to be thought of in a satisfactory portrait.

CLINTON DENT, ESQ. Copyright portrait by Elliott & Fry.

In general portrait work, Mr. Elliott says that his aims are:—1, likeness; 2, variety; 3, suitability of technique to personalty of sitter; and, 4, judicious improvement by retouching. Of the three large studios, not one is ideal. They are such as the position of the building and its surroundings rendered possible. The principal one, in which were made the two portraits that I have reproduced,* is about 30 ft. × 16 ft., with side and top-light almost the whole length of the side which faces N.E., and with a top-light about 7 ft. square on the S.W. side. The second studio is evolved from the success of the "at home" work, and is an attempt to come as near as possible to the conditions of an ordinary drawing-room. It is about 30 ft. × 16 ft., and at 6 ft. from each end it has a double window about 5 ft. wide by 6 ft. high, and coming within about 2 ft. 6 in. of the floor. In the roof above each is a light about 5 ft. × 4 ft.

The operating methods are much the same as in other modern studios of the best type. Every effort is made to induce the sitter to unconsciously pose himself, rather than to do any elaborate posing by the photographer; and the lighting is varied by changing the positions of the sitter and the camera, rather than by moving blinds and curtains.

* *The other portrait of the subject used for the purpose of illustrating the work of photographers already considered in this series appears on page 332.*

Digitized by Google

CLOUDS in LANTERN-SLIDES.

Written and illustrated by Harry Holt.

THE improvement to be made in a lantern slide by the insertion of a suitable sky or cloud will scarcely be believed by those who have not discovered the fact for themselves. A comparison of figs. 1 and 4 does not fully convey the enormous difference between the two slides, as the bald sky of fig. 1 is toned down to a certain extent in reproduction. The method of inserting a sky which I adopt is really more difficult to describe than to use, but I will endeavor to make clear how I go to work.

First, then, having made your landscape slide (fig. 1), in which, of course, the sky portion must be absolutely clear glass, you select a suitable cloud negative (fig. 2) of quarter-plate size. Take care to observe how the lighting is. The cloud must be lighted in a direction opposite to that of the negative—*e.g.* from the right if the negative is lighted from the left, as it will be reversed in the slide. Having selected a suitable cloud negative, place it upon the landscape slide and carefully notice which portion of the cloud comes most suitably into the sky portion of the slide. Now with a paint-brush charged with red color, paint upon the back of the cloud negative (taking the outside of the slide as a guide) a couple of lines to indicate where the lantern plate, to form the cloud cover-glass, is to go. Observe,

FIG. 1.—Landscape as it appears before the cloud transparency is added.

FIG. 2.—Print from cloud negative.

Digitized by Google

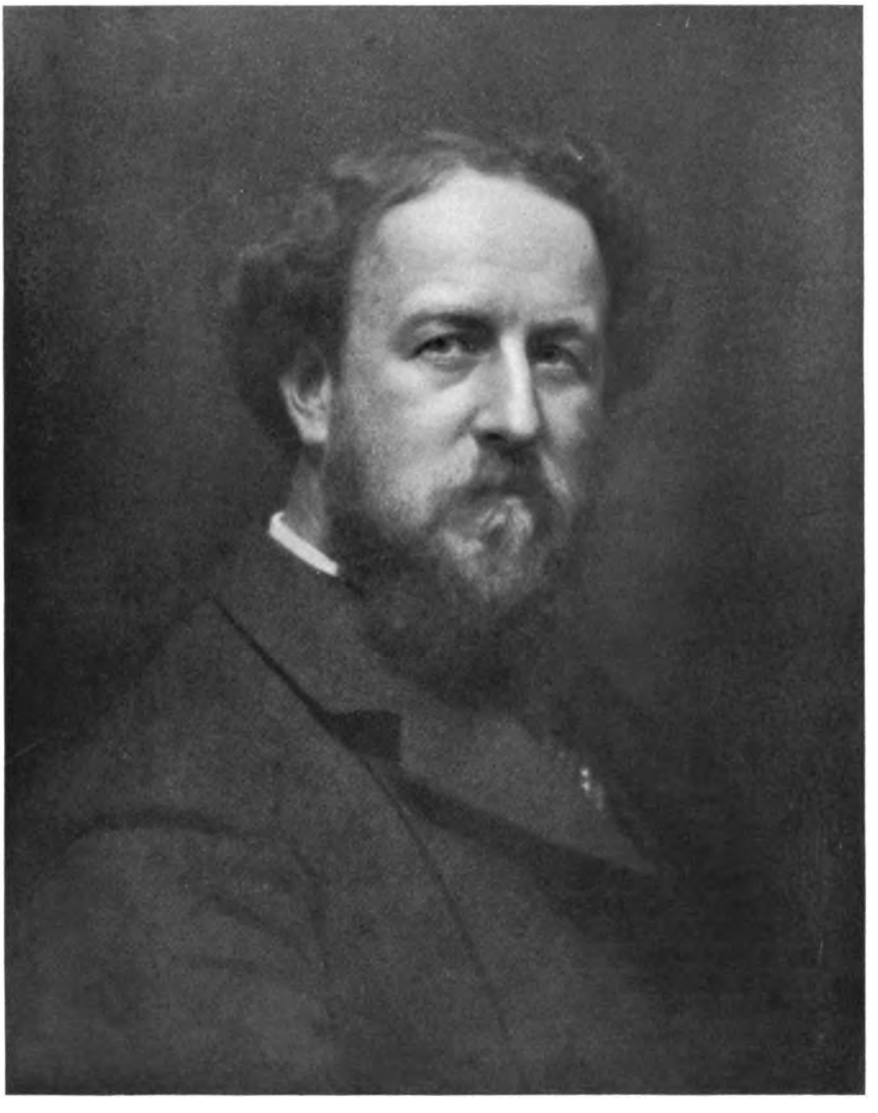
also, the portions of the landscape slide where no cloud is required, and make another mark on the back of the cloud negative indicating this. The portion below this mark must be covered up during exposure (fig. 3). Now take a half-plate printing frame with glass in it, and place the cloud negative therein, film side upwards. A sensitive lantern plate is then placed within the limits of the red lines first alluded to above, the back of the printing frame put on in the usual way, and you are ready to expose. Cover up that portion of the cloud negative below the other paint mark—*i.e.* on the part where the landscape will come — with a piece of card laid on the printing frame, and by the aid of a wax match, moved across the front of the frame, make the exposure for the clouds. Hold the lighted match three or four inches above the frame, but do not burn all the match. I find as a rule that a half is sufficient. Develop the exposed cloud lantern-plate in the usual way, but keep it very thin, as only the faintest image of a cloud is necessary. Having fixed the "cloud slide," again take up the landscape slide and place that and the cloud cover-glass (as it will be) film to film, without allowing them to touch, as of course one of them will be wet! "Compare notes," so to speak, and see how the cloud fits the landscape, reducing any portion of the cloud that may show through the landscape with ferricyanide of potassium and hypo applied with a small brush. When dry, bind the two together in the usual way, and you will have a result such as is seen in fig. 4. I am sure that the practice necessary to obtain perfectly successful results by this method will compensate the worker by the excellent slides he can thus produce.

FIG. 3.—Print from cloud negative as masked for printing on to lantern plate.

FIG. 4.—The finished slide—landscape and cloud transparencies bound film to film.

It will be noticed that the cloud is reversed, more lightly printed, and less sharply defined than in figs. 2 and 3. The diffused definition in this case is due to the necessity of printing the cloud negative from the glass side when making prints for reproduction, but the same thing may be done in printing the slide with advantage to the final effect.

Digitized by Google



PORTRAITURE BY ELLIOTT & FRY.

(See "The Portrait and the Studio," page 327.)

Digitized by Google

MOUNTING THE EXHIBITION PRINT

BY FREDK H. EVANS.

This month's exercise and last of the series.—"In Ely Cathedral," by Fredk. H. Evans. Mounting Papers:—Lindenmeyr's "Ruskin Napoli" (covers of January last); "Melton Mordore" (covers of February); and "Nut Brown" (last month's covers).

The cover this month is of Lindenmeyr's Stone Paper, as frequently used by Mr. Evans during the course of lessons which closes with this issue.

For our last experiment I have ventured to give an example of my architectural work, because its color made a new use possible of our shades of brown.

Though portions of the picture are so brilliant, or luminous, the whole is so softly lit that a fairly dark scheme does not hurt it in the way of over-accentuation, though a lighter scheme all over could be made to do equally well. But I thought it might also be useful to show that the soft brown shadows of the roof portion can be treated very harmoniously by the right shade of soft brown color—in a lighter tone, of course, so as not to unduly brighten the high-lights or unduly weaken the shadows.

Our picture is to be, as usual, carefully cut out close up, and is then placed on a piece of the Napoli paper we used in our first essay, last January; that is to be trimmed to show margins of $\frac{5}{16}$ths at top, $\frac{3}{8}$ths at sides, and $\frac{1}{2}$ in. at foot. This has now to be placed on a piece of the familiar Nut Brown paper, and that trimmed to show $\frac{1}{8}$th in. margin all round. This delicate pale brown on the darker Napoli helps to make the latter agree better with the lighter portions of the picture, and it also shows how useful it is to make contrasting shades of the same color help out a scheme of mounting; one ceases to feel color *as* color, and only feels its charm in varying shades of agreement with our picture.

We are now ready for the chief margin, the broadest, which is to be again of the Napoli, the whole mount being mainly an exercise in two shades; this is to be trimmed to show margins of $\frac{3}{4}$ in. at top, $\frac{7}{8}$ths at sides, and $1\frac{1}{2}$ in. at foot.

To enrich and warm all this up, and prevent any feeling of monotony, we now place the whole on a piece of the Mordore paper, trimming it away to show $\frac{3}{16}$th inch all round. The whole is then to be finally placed on a further piece of the Napoli paper as an outer frame or margin, keeping this margin relatively true to the effect shown in the reproduced mounted picture.

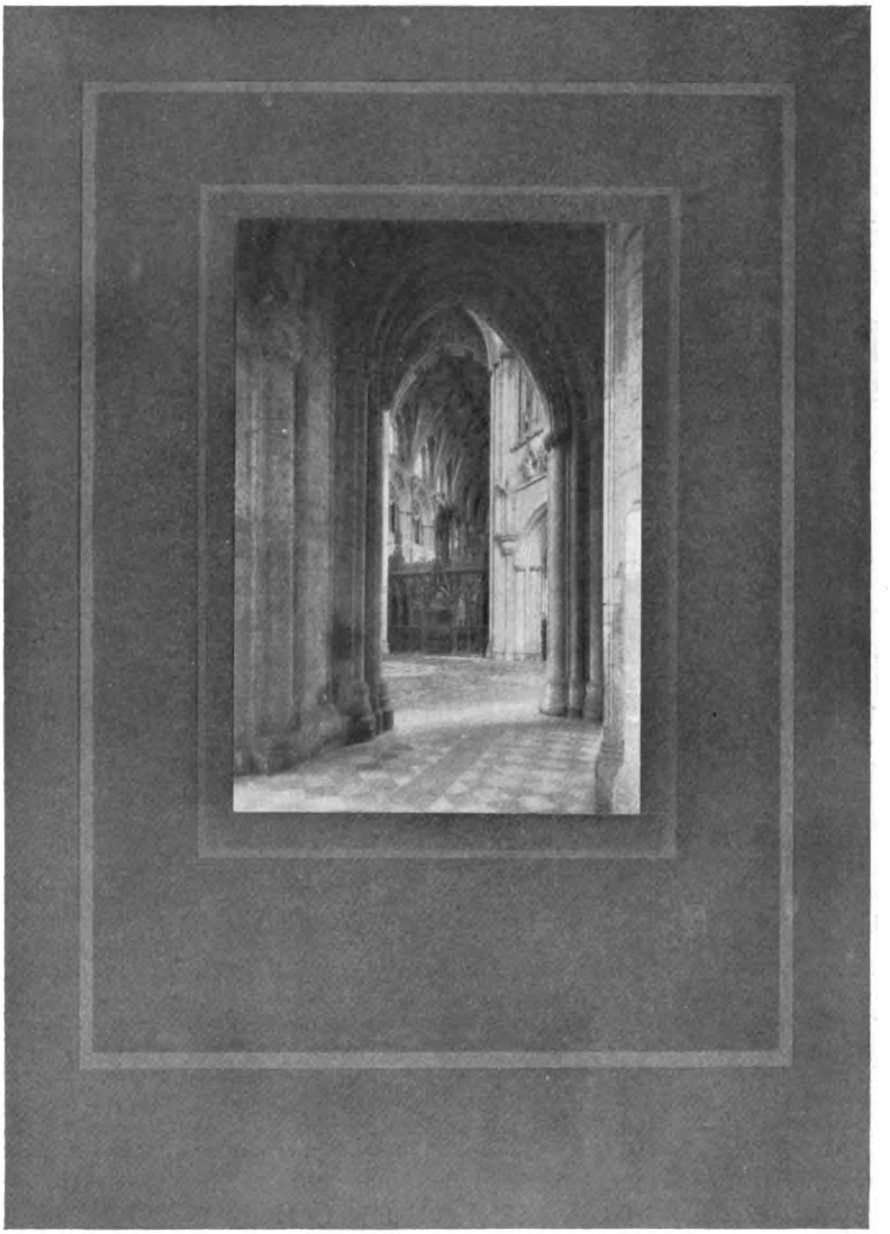
The whole results in a very rich, soft, and harmonious scheme, giving great but not undue brilliancy, and yet not degrading or killing the values in either shadows or high-lights.

With this example I now part company with my fellow students in this most interesting occupation, and I must hope that my exercises may not have proved in any instances to have been examples of "how *not* to do it."

"The Photogram," 1905.

The present number concludes the eleventh yearly volume of *The Photogram*. The next issue—January, 1905—will be produced in a new size and style, and will inaugurate a number of new features. It will appear December 21st.

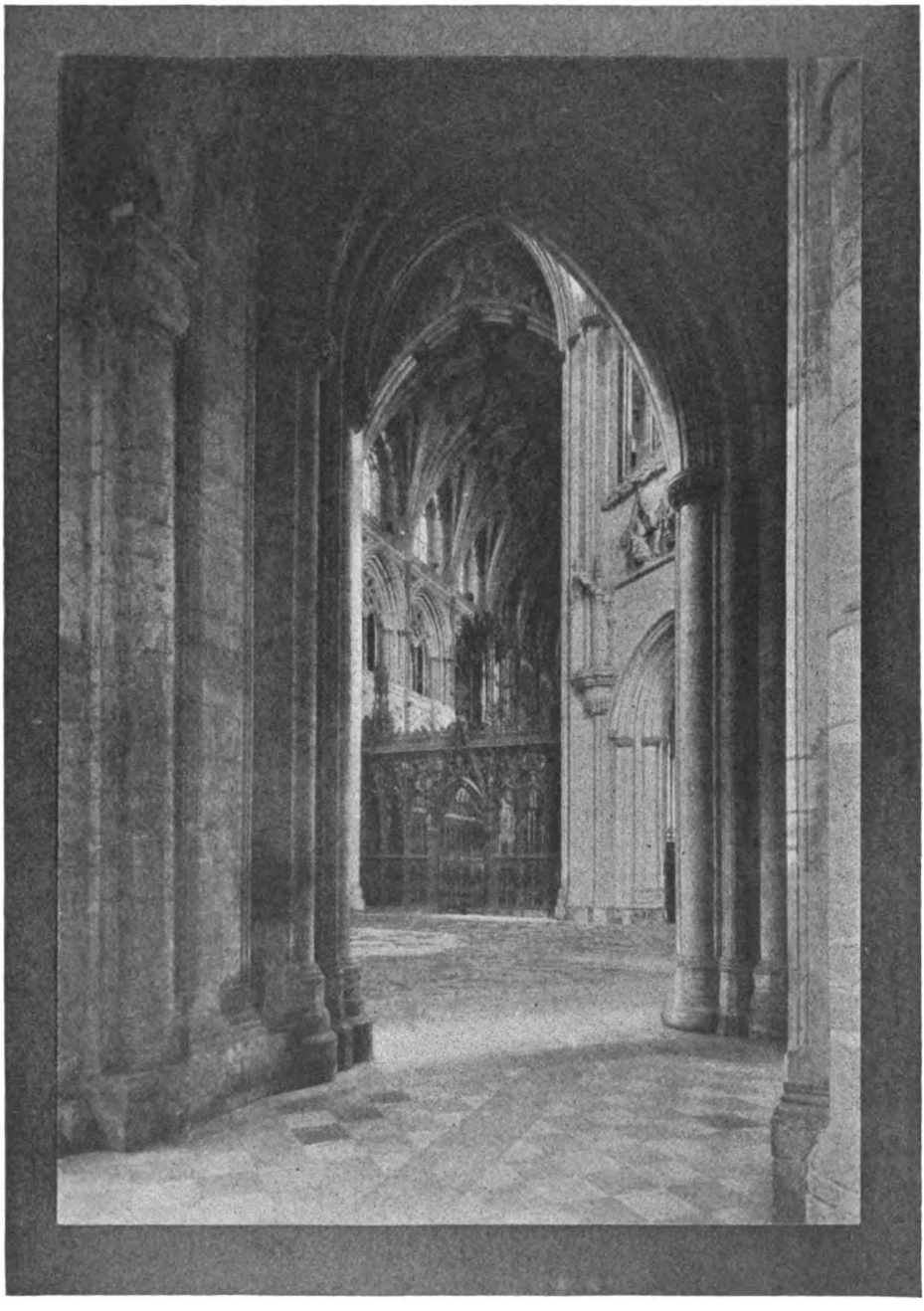
Digitized by Google



MOUNTING THE EXHIBITION PRINT.

"In Ely Cathedral." *By Fredk. H. Evans.*—Scheme for mounting this month's supplement of this picture as directed by Mr. Evans on the preceding page.

Digitized by Google



IN ELY CATHEDRAL. BY FREDK. H. EVANS.

MOUNTING THE EXHIBITION PRINT.

After trimming off the border, the above picture is to be mounted as shown and directed in Mr. Evans' article on another page.

Digitized by Google

Digitized by Google

FIRE! FIRE!

Some notes made in conversation with Mr. Rheinhold Thiele of Chancery Lane.

THE scene of a great fire, attractive to the ordinary onlooker, is doubly so to the photographer, who has the means of recording the destruction of property and of fixing ocular evidence, which may be of the greatest value to the owners of the premises and to others concerned. A fire is one of the events which the press photographer can regard as a certain thing in one way or another, either by reproduction fees in the press, by the sale of prints to the owners, or by the publication of post cards in the district of the conflagration. It looks callous in print, but the present interviewer retains an appropriately warm corner in his heart for fires, as his first fees for reproduction in the press were earned on the occasion of a fire at a large railway junction. He was on the spot within an hour or two, and four of the London papers used prints from his unpretentious quarter-plate negatives. In work of this kind a hand camera is far preferable to one on a stand. The authorities dislike people exploring what is usually a danger region, and if you have to set up a tripod to make your exposure you will find it difficult to get anything from the best points of view. On the other hand, when photographing with official sanction and assistance, a properly-equipped stand-camera should be used. It should be carefully adjusted for verticality in both directions, so that any distortion of buildings or walls may be properly attributed to the state of the building and not to any fault of the photographer. These negatives also are required to show everything in the greatest possible detail, and so time should be given for smoke or steam to clear off before making the exposure. The conditions of lighting are often most unfavorable: backed plates should be used and steps taken to obtain as much strength as possible in the negative by the use of a well-restrained developer containing a full proportion of the pyro or other reducing agent proper.

To photograph a fire in progress is a still more difficult task, and it is one, moreover, which very probably will not repay the photographer. Some little experiment has been made in this direction with exposures of several minutes on a rapid plate and the lens at *f*/11, but the results have not been of much service except as novelties. Possibly by making an exposure by the light of the fire in this way and then waiting with the camera in position for a second brief exposure in the early morning (to secure the general detail of the structure) some better success would be attained.

Fire insurance companies, makers of fire-alarms, fire-escapes, or fire-engines, and makers of safes, represent the market for photograms of the disastrous results of fires, as they can use them for graphically bringing home to their possible customers the value of their terms or appliances. The "Profits and Income Insurance" is a fire assurance company which has used camera records of fires for these purposes, and particulars of certain special offers which they make are given in the advertisement pages.

The two examples of photographic work amid the scenes of a great fire are reproduced on the next page by courtesy of Mr. Thiele, of 66 Chancery Lane, who has done a great deal of this kind of work.

Digitized by Google

Fire ruins of the Metropolitan Tabernacle, Newington Butts.

Fire ruins of Storehouses, G.W. Railway, Bishop's Road, near Paddington Station.

PHOTOGRAPHY AT THE SCENES OF FIRES.

Two examples by Mr. Rheinhold Thiele.

Digitized by Google

Point of View in Street Scenes.

A great many street views for which a hand camera has been used give a very unreal impression of the locality, owing, in a great measure, to the point of view of the lens being considerably lower than the normal point of view. We are accustomed to the aspect of the streets from a standing position, and in viewing a picture taken from a lower standpoint do not instinctively realise and make allowance for the alteration in the relative heights in the picture of near and distant objects owing to the lowering of the horizon line. The result is that distant buildings, etc., appear to be of much less height than they really are. This effect is often markedly illustrated in those full length portraits of the early British school which have landscape backgrounds. The point of view has been chosen sometimes as low as the knees of the figure, and although the immediate background to the figure and the accessories, pillar and curtain, near foliage, horse or cannon, or whatever it may be, appear in correct proportion, the objects in the distance seem Lilliputian. That is the precise word to indicate the impression given. It is probable that in some cases the perspective really is at fault, but more often the effect is simply due to distant objects occupying a position with regard to the figure which we are accustomed to find occupied by objects on a much nearer plane. The artist adopts this treatment for a sufficient reason, and it is not necessary for his purpose that his picture should be topographically correct. The photographer may legitimately adopt the same method of treatment with the same pictorial gain, but, when his aim is to secure views in a town which reasonably represent its normal aspect, he should remember that his own view and that of the lens, when held breast high, may be so entirely different as to cause a very false impression. With a fairly open space and no object or figure near, a foot or so higher or lower makes little difference; but in a narrow thoroughfare it is better to choose a standpoint higher rather than lower than the normal height of the eyes.

The Tripod for Street Views.

The hand camera is designed for use normally in the hands, but there is a limit to its applications thus used. It is not every subject that an exposure of a fraction of a second will suffice for, and there are other considerations at times which invite a resting place for the camera. The serious worker who cannot afford to pass subjects because they are inconvenient, must carry a tripod or its equivalent. My actual experience has been with an ordinary tripod which answered its purpose completely in many respects, but which was far from my ideal of what a stand for quick work in the streets should be. An expert hand-camerist should be independent of the focussing

Digitized by Google

screen for ordinary work, so my ideal tripod top, though provided with the usual means of affixing the camera, should be of sufficient size to allow the camera to be used merely resting upon it with safety. It should have a ball and socket joint so that the top can be quickly adjusted horizontally in whatever position the legs may be, and be provided with spirit levels so placed that they may be seen at whatever height the stand be raised. The object of this particular form is to enable the stand to be adjusted without the camera, so that at the psychological moment for taking the picture the camera can be placed upon the platform, pointing, of course, in the right direction, and the exposure made by the pneumatic release, the work of a few seconds. The particular form of the legs is a matter of fancy, but they should, of course, be adjustable for height, and the higher they would go to the better. It would be a great advantage to have a stand which would raise the camera to six feet if necessary. Such a stand would necessarily not be very portable as regards bulk, but its weight need not be excessive. If thought necessary, a finder could be fitted to the platform. I do not think there would be any greater danger, in practice, of the camera falling than if fixed to the stand. Under all circumstances one carefully guards the tripod from collision, and except for a few moments there would be no camera to dislodge.

A Hint to Intending Exhibitors.

After taking great care to prepare a picture for an exhibition, it is a great disappointment to have it rejected, and even allowing for the natural prepossession of its author, on its return, it sometimes does appear that an injustice has been done, and that less worthy work has been accepted. It does not follow, however, that there has really been any want of judgment on the part of those responsible for the selection. On the other hand, when a man views his first accepted work on the walls of a gallery, it very rarely happens that he does not receive a painful shock at finding what a poor insignificant thing his *magnum opus* appears. The fact is, that the conditions under which a picture is seen at home are so entirely different from those of a gallery that the whole aspect is changed. It is an art in itself to prepare a print for exhibition. The strong top light of most galleries which are constructed for picture exhibitions seems to exaggerate whatever the particular weakness of the print may be. An extremely delicate print which, in a room, is full of subtle gradations often becomes but a feeble grey patch, while, if the tendency is of the opposite character—that is, towards an excess of contrast—the skylight seems to rob it of the middle tones altogether, accentuating its hardness. There are many other influences over a picture viewed in a gallery which I cannot enter into here, but the point mentioned is one which every would-be exhibitor can consider and act upon. To those who are intending to try their luck at exhibitions next year, I would suggest, first, that they should not rely upon their own judgment for the general merits and defects of their work. Not one in a thousand is a good judge of his own work, and the fact can be reasonably accounted for. Nearly always the first impression of a picture is the true and lasting one. The author never has a first impression. To him his work is an agglomeration of details, the relative importance of which he is sure to miscalculate. He cannot see his work as a whole without consciousness of its construction. The next hint is, before deciding on the actual print, put it to the severest test of light possible. Frame it and hang it on the wall outside, in the broad light of day. If it stand this test the worst that can happen is that under less brilliant lighting it may appear a little low in tone, but this is a far less serious defect than the opposite one.

Digitized by Google

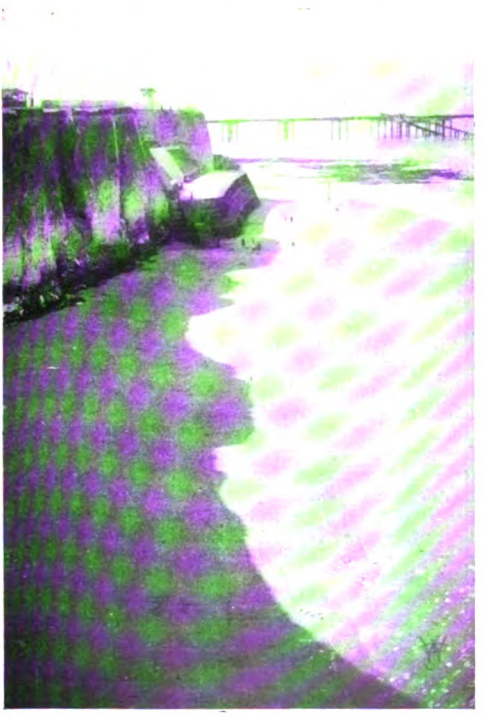
"CARTING WRECKAGE AFTER THE STORM." *By A. J. Loughton.*

The negative is a focal-plane exposure on a Barnet plate in a home-made hand camera and fitted with Aldis lens. The print is on Barnet bromide paper.

SEASHORE PHOTOGRAPHY.

Prize Competition No. 11.

First prize (£1 1s.), "Sea-shell" (J. C. Warburg, London); second prize (10s. 6d.), "Starfish" (W. Foster Brigham, Scarboro'). Honorable mention:—"Gerontius" (R. Mackay, Leeds); "Foam" (A. J. Loughton, Nottingham); "Non Est" (Clarence Ponting, Scarborough); "Homo" (R. M'Gahey, Belfast); "Pebble" (G. A. Tomkins, Lewisham); "Maori" (H. Davidson, Wellington, New Zealand); "A Powis" (C. A. Slatter, Luton); "St. Giles" (Miss A. E. Thompson, Harrogate); "Salt Air" (J. T. Dyson, Hull); "Novocastrian" (Harrop P. Wight, Newcastle-on-Tyne); "Capricornus" (A. T. Jones, Newport, Mon.).



"THE SHADOW OF THE CLIFFS." *By J. C. Warburg.*

From a negative on a Cadett "Spectrum" plate through "Absolutus" filter. Exposure, half-second at *f*/8 of Ross Rapid Symmetrical at 11.30 in April sunshine.

A Brief Criticism of the Reproduced Prints.

"The Shadow of the Cliffs" is a strong, well-arranged piece of composition, and has excellent tone-rendering. The shadow on the beach is instinct with diffused light, which is reflected into the face of the cliff. So far as this shadow part is concerned, the effort is altogether praiseworthy. In the lighter tones, however, the texture-rendering is not entirely satisfactory. The lighted part of the beach does not fully explain itself (in fact, the line of light might easily be the edge of a gentle wave, pushing its fringe of foam on to a nearly level beach represented by the shadow). The sea and sky in the distance, with the pier that stands either in the sea or the sky (the print itself hardly tells us which) also fail of proper explanation.

"Early Morn" deserves much praise: if only for the bold S line which makes the foreground and redeems the print from being only a very beautiful study, in soft tones, of a sea and sky.

"Carting Wreckage" distinguishes itself by being a perfectly everyday thing done in something better than the everyday manner. The position has prevented the exaggeration of perspective so common with these subjects, when taken from

Digitized by Google

nearer to, and more in front of, the leading horse. The reflection in the wet sand gives a variation from the common "hauling timber" or "ploughing" scene, and does much to make the picture. The preserving of some detail in the horses and men (the deepest shadows) and the securing of a soft background of shore and distant cliff, are good. Even the keeping down of the sky and near beach below the tone of the surf is worth mentioning, because it is rarely seen.

The Series Prize.—This month's awards leaves the scoring for this prize of £5 5s. as follows:—W. Foster Brigham, 11; R. Mackay, 11; Clarence Ponting, 7; A. J. Loughton, 6. The last competition, "Outdoor Portraiture," will have decided the Series prize award almost by the time these lines appear, since this competition closes on November 26th. The results will be made known in the January issue.

The full list of next year's competition appears this and every month among the advertisements. The subjects for the first three of the new series are:—

Applied Photography.—A brief account (about 100 or 200 words) of uses which the competitor has made of his camera—in making money, in business, in his profession, in charity, in private life. All the better if illustrated with actual prints. Last day, January 1st.

Portrait of a Girl.—Prizes for the most pleasing and pictorial treatment. Indoors or outdoors; head or full length; but it should be a "portrait," not a figure or "character" study. Last day, February 1st.

Daily Work.—For the best pictures bearing out the title "Daily Work." The subject may be the cobbler, blacksmith, or road sweeper, factory hands, or a maid of all work, the competition suggesting homely or regular occupation, for which subjects can be found close at hand. Last day, March 1st.

Next year's competitions will be run on our established lines, but there are one or two changes in the rules to which we draw attention:—No more than three prints must be sent: the prizes will be our specially designed award, in bronze and silver for the competitor placed first, in bronze to the second.

It will greatly aid us in the return of the prints if competitors will write on the outside of the envelope containing their name and address the following, and nothing more:—*Nom de plume*, number of prints, face value of stamps enclosed for return postage.

THE PHOTOGRAM DARK ROOM NUMBER.

AMONG the remaining competitions for 1905 we would draw special attention to No. 5, in which prizes are offered for the largest list of dark rooms not published in *The Photogram* Directory of Dark Rooms, 1904. The June issue of *The Photogram* will in 1905 again contain a directory of dark rooms, and we invite our friends in all parts of the world to co-operate with us in making it even more complete.

The First American Photographic Salon.—The President of this organisation, Mr. Curtis Bell, sends us a letter, too long to print *verbatim*, from which we extract some of the important points. The American Federation of Photographic Societies which is responsible for the First American Salon includes the whole of the important societies in the States, with three exceptions.

Of the extremely influential list of patrons, Mr. Bell states that he personally interviewed or obtained a consent in writing from twenty-nine out of the thirty-seven gentlemen whose names have been published. Those for whom he was thus personally responsible include the Hon. John Hay, Secretary of State, U.S.A., Thomas C. Platt, Senator Chauncey M. Depew, Senator Hon. B. B. Odell, jun., Governor of New York, and the Hon. Geo. B. McClellan, Mayor of New York. The remaining eight gentlemen were approached, and their consent reported in every case, by a responsible member of the Salon Committee definitely delegated for that purpose. Of the twenty-one artists forming the jury twelve gave their consent to Mr. Bell personally, while the remaining nine were approached by, and gave their consent to, Fredk. W. Kost, who is said by Mr. Bell to be "a man of such character and standing in the art world that no decent man in this country would question his statement."

Amongst the art galleries to which the Salon exhibition is to be removed after it has been shown in New York, are the Corcoran Gallery, Washington (a national institution), the Chicago Art Institute (owned by the City of Chicago), and the Boston Art Club, which is one of the most influential of American painters' societies.

Mr. F. C. Beach, joint editor of *The Scientific American*, a gentleman who is well known in all the photographic circles, also writes us fully supporting the First American Salon, and explaining how his name appears on its committee as "of Toronto." This is simply because the Toronto Camera Club found it impossible to send a representative to meetings which were to be held in New York, and therefore nominated Mr. Beach.

Digitized by Google

EARLY MORN. *By Foster Brigham.*

Second Prize in "Seashore" Competition.

In reference to the picture Mr. Brigham writes :—"It was taken at 6.30 a.m. early in November, with the quickest bulb exposure of a Thornton-Pickard shutter. The plates in my holders—Barnet 'Extra Rapid'—were unbacked, but I did the best I could to minimise halation by exposing freely and developing with a strong developer (pyro-soda). Result, no halation, but the sun was reversed. This was got over by sticking a circle of paper on the glass side of negative. I had to wait some time before I got the wave in foreground to come up as in the picture, i.e. *not cutting the picture in half."*

FOR CHARITY'S SAKE.

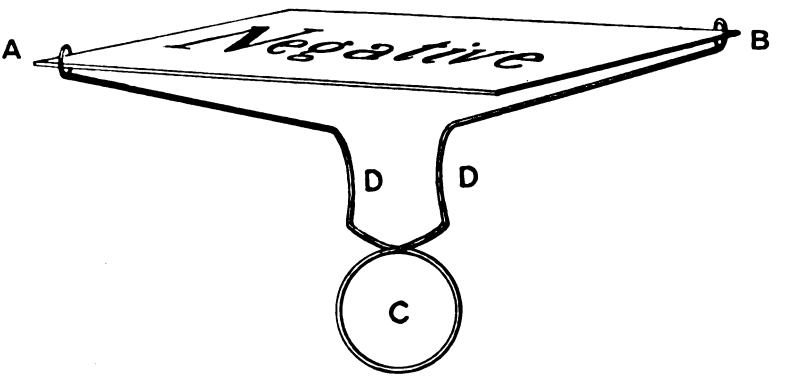
THE annual general meeting of The Professional Photographers' Association was resolved into a public meeting, to which had been invited those who were interested in the proposal to re-start a Benevolent Fund. Very few outsiders attended, but the association had a strong representative lot of provincials, as well as leading London men. From the more distant centres came Warwick Brookes (Manchester), T. Birtles (Warrington), Wm. Gill (Colchester), T. C. Turner (Hull), Percy Lankester (Tunbridge Wells), W. Coles (Watford), H. Spink (Brighton), and many others. Though many different opinions were expressed as regards details, there was no mistaking the feeling of the meeting, and a resolution "that in the opinion of this meeting it is desirable that a Benevolent Fund should be established," was unanimously carried. From some professionals who could not be present came offers of help. One enclosed a cheque for a guinea; another offered to give (at least) five shillings as a start, and a shilling a month afterward; another offered five shillings at once, and sixpence a week to follow; and there were other promises. Contributions to a very substantial amount were offered by some of those at the meeting, and one gentleman proposed that members of the association should be invited to contribute an annual sum equal to one per cent. on their rentals,—he was prepared to lead the way. The matter was left for the committee of the P.P.A. to consider, and their hands will be greatly strengthened if *many* more will offer regular contributions. Address the Secretary, 51 Baker Street, London, W. And do it *at once*.

Digitized by Google

What's What

A Very Simple Negative Holder, useful when varnishing, can be easily constructed by bending a piece of wire into the shape shown below. A piece of brass wire and a pair of round-nose pliers are all that is required, and the thing can be made in five minutes. The ends A B are bent oval in shape to obtain a good grip of the negative, and the distance between them should be half an inch more than the diagonal of the negative (5½ in. for quarter-plate).

When varnishing, put the second finger of the left hand through C, and one corner of



the negative in A, and then grasp the holder at D with the first finger and thumb, so as to hold the opposite corner in B, and the negative will be in a firm and convenient position for varnishing. To remove the negative, release the grasp of D.—W. A. H. Weston.

Background Stands.—A convenient arrangement for a portable background is shown in the accompanying illustration, fig. 1, which is the back view. It is easily made, the construction being as follows:—The upright is made of one of the bamboo poles sold by furniture dealers for curtain poles, price about 1s. They are usually 6 ft. 6 in. long and 1¼ in. diameter. The top and bottom of this pole should be bound tightly round the outside with copper wire for about 2 in., and a plug driven into the top end, to prevent splitting.

The stand is shown in fig. 2. It is made of a piece of hard wood, the heavier the better, and should be 10 in. in diameter and 1½ in. thick. Three projecting feet (*c*) are screwed on to the bottom as illustrated. These feet are the same as those on some foot-stools and other furniture, and can be bought ready made. The method of fastening on the upright to the stand is also shown in the figure. A is a round wooden plug glued into the stand B. Its size should be such that it will fit tightly inside the bottom of the bamboo upright E, into which it should go as far as the first knot. This will give the whole a firm support.

The background cloths are now supplied cheaply by most photographic dealers in various shades, so that it is hardly worth while to make this part, especially as making it involves the mixing of such things as glue, size, whitening, and other messy ingredients. The best size of cloth for this stand is 6 ft. 6 in. by 4 ft. 6 in.

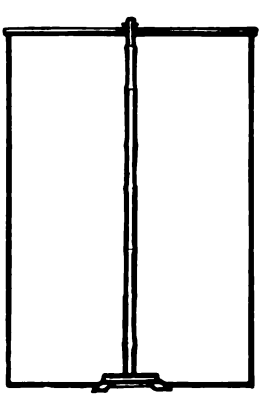


Fig. 1.

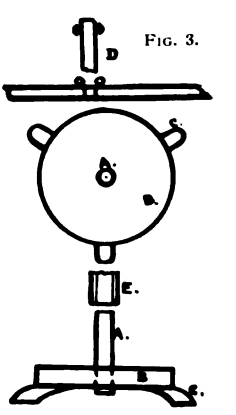


Fig. 2.

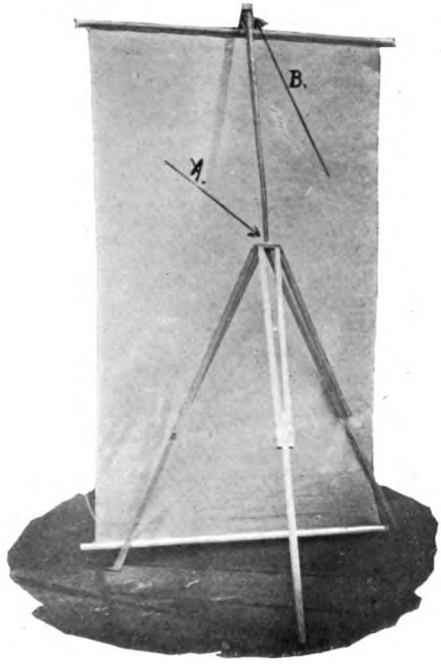
Fig. 3.

Only one roller is required, at the top. In the centre of this roller fasten two small eyes, about 1 in. apart (fig. 3) by short cords, and at the top of the upright put in two screws on opposite sides, leaving ½ in. projecting. This will be found a convenient way of attaching the cloth to the upright. If a shorter cloth is used, two or three pairs of these screws should be put in at intervals, so as to make the height of the cloth adjustable.

Digitized by Google

A reflector can also be made on the same plan, using a white blind of a smaller size in place of the background cloth, and these two appliances will be found useful by most amateur photographers.—F. H. HUTTON.

The following short description and sketch will explain how I made a stand for indoor and outdoor use at a total cost of 1s. A heavy wood tripod was procured from Messrs. Hobbies, Ltd., price 1s. An old walking stick, from which the head was unscrewed, was next pressed into service. The brass knob on the end of same was removed, and with the box part of a cabinetmaker's box and tap, a thread was made on same at part marked A. A piece of wood, size 6 in. × 2 in. × 1 in., was next attached to the end from which the handle had been removed (see point B). The tripod top was then detached from the legs, and a small hole bored in the centre. With the aid of aforementioned tap, a thread was run in the inside of this hole, so that the similarly prepared end of the walking stick could be screwed into tripod head (see point A). By re-attaching the head to the legs of the tripod, the amateur will find himself in possession of a stand on which a background may be safely suspended. This inexpensive arrangement will, I feel sure, meet most, if not all, the requirements of an amateur photographer.—WM. ALLAN.



Toning Bromides. — The following method gives tones from warm brown to red chalk. In the early tones the print is muddy, but this usually disappears before the warm brown is reached. The red chalk gives a brilliant effect resembling carbon, and is, I think, absolutely permanent. Soak the black and white print in water until limp, and then bleach in the following bath :—

I.

Potass ferricyanide	20 gr.
Potass bromide	15 ,,
Ammonia (·880)	3 drops.
Water	1 oz.

Rinse off the bath in water, and immerse the print in No. II. until the image fully appears.

II.

Sodium sulphide (not sulphite)	20 gr.
Water	2 oz.

This bath, also No. I., can be used over and over again until exhausted. The print appears of a sepia brown color, and after a washing of fifteen minntes in clean water is toned in No. III. I prefer to dry print between baths II. and III., as I think a better color is thus produced.

III.

Gold chloride	2½ gr.
Ammonium sulphocyanide	2½ ,,
Water	6 oz.

Here the toning takes place, passing from warm brown to red chalk, and working clearer as the toning proceeds. Five minutes is usually sufficient, but a longer immersion will not hurt, the result being simply to clear up the high-lights more. The toning takes place a little slower when reaching the red. Pour off, and wash for twenty minutes or so. I find the process especially suitable for large heads on cream crayon paper, giving a brilliant red with cream tinted whites. Also the final red tone is very suitable for glossy papers.—A. H. AVERY.

Digitized by Google

"Home Portraiture," approached from the pictorial standpoint, is the subject of No. 65 of *The Photo-Miniature*. The author, Gaston M. Alves, deserves thanks for the way in which he writes the statement of pictorial aims and the description of practical ways and means.

Mounting the Exhibition Print.—Among the many marks of appreciation of Mr. Evans' lessons we may mention a paper read before the Bristol Photographic Club on November 8. The author, Mr. Thomas W. Brown, exhibited a complete set of the twelve mounting schemes as provided by the supplements and mounting papers issued with *The Photogram* through this year.

How to Photograph with Roll and Cut Films. By John B. Hodges. (London: Hazell, Watson & Viney; 1s.).—An elementary handbook on photography for those who elect to work with celluloid films, and who must therefore note the special advantages and drawbacks of their choice as they affect the negative and the various after-processes. Mr. Hodges dwells feelingly on the several points.

The Science of Gum.—A German work by a German "doctor" is bound to lay out the principles and practice of its subject in a comprehensive way, yet withal minutely. That is what has now been done for the gum process (*Der Gummidruck*, by Dr Wilhelm Köster; Halle: W. Knapp; 3s.). One cannot imagine Monsieur Demachy writing it. There are too many chemical formulæ and too much of weights and measures. But the author is at great pains to expound the influences of one thing and another in the making of a gum print. And we must applaud his efforts, which are not confined, let us say, to the chemical theory of gum printing, but are directed towards simplifying and explaining development, multiple printing, and other branches of "gum."

THE CHANGE IN *THE PHOTOGRAM*.

On page 326 is an announcement of the alterations commencing in "The Photogram" *for January next. That number will be issued on December 21st. Dealers in all parts of the country will have it before Christmas. May we ask you to make certain of getting it? May we also ask you to mention the change to your friends who do not regularly obtain* "The Photogram"? *We have good reasons for believing that the January number—the first number of a new volume in a new dress—is particularly likely to attract new readers. Your friend Smith may have seen your copy any time this year. Will you persuade your friend Smith to order the January number that he may see what it is like? Our claim is that your friend Smith, or anybody else who is practically in photography, will want the February number after he has studied January. Will you give* "The Photogram" *the opportunity to earn the respect of your friend Smith?*

FORTHCOMING EXHIBITIONS AND COMPETITIONS.

Particulars of Exhibitions are given when first announced, and again when it is time for entries to close. Will secretaries who wish insertion please mention details below, and note that last day is 12th of each month for publication on 25th? The Editors will feel grateful for the Exhibition catalogue as soon as published.

En.=Entries. Pic.=Pictures. Ex.=Exhibition. G.=Gold Medals. S.=Silver Medals. B.=Bronze Medals. O.C.=Open Classes. Sec.=Secretary.

(1) *The Scottish Salon* (confined to photographers in Scotland or to Scotsmen residing elsewhere).—En., Dec. 31. Pic., Jan. 6, 1905. Ex., Jan. 14 to 28. Sec., W. A. Frame, 28 Bank Street, Hillhead, Glasgow.
(2) *Southsea P.S.*—Ex., Dec. 2 to 8. Sec., F. J. Lawton, 20 Clarence Square, Gosport.
(3) *Muirkirk A.P.S.*—Ex., Dec. 8 to 10. Sec., W. Barrowman, Ayr View, Muirkirk.
(4) *Sefton Park (Liverpool) P.S.*—En., Dec. 2. Pic., Dec. 9. Ex., Dec. 12. 3 O.C. S. and B. Sec., H. E. Cubley, 3 Langdale Road, Sefton Park.
(5) *Southampton C.C.*—En., Dec. 2. Pic., Dec. 8. Ex., Dec. 13. 5 O.C. Sec., S. A. Kimber, Oakdene, Highfield, Southampton.
(6) *Boston C.C.*—En., Jan. 1, 1905. Pic., Jan. 9. Ex., Jan. 12. 5 O.C. S. and B. Sec., H. M. Hames, 15 West Street, Boston.
(7) *Swansea C.C.*—Ex., Jan. 19, 1905. Sec., W. R. Stephens, 15 Temple Street, Swansea.
(8) *West Hartlepool A.P.S.*—En., Dec. 31. Ex., Jan. 25, 1905. The Secretary, Hill View, The Park, West Hartlepool.
(9) *Hastings P.S.*—En., Jan. 2, 1905. Pic., Jan. 7. Ex., Jan. 11 to 13. 6 O.C. G., S., and B. Sec., Fred Judge, 21A Wellington Place, Hastings.

Digitized by Google

Trade

An important change in the reviews of apparatus and materials will be made in the January issue of The Photogram. *That number, as announced on another page, will mark the production of the magazine in an improved style and with a larger contents of articles and illustrations than hitherto.*

Catalogues, Price Lists, etc.—*Erdmann & Schanz*, 116 Bedford Hill, Balham, S.W.—Cameras.

Kodak, Ltd., 57–61 Clerkenwell Road, E.C.—Optical lantern and enlarging list.

Houghtons, Ltd., 88–89 High Holborn, W.C.—Magic lanterns, enlargers and model engines, including particulars of the Sol lamp, new model.

The Cyko Competition (Messrs. Griffin) has been postponed until the spring.

"Tabloid" Chemicals (Burroughs Wellcome) have obtained three grand prizes and three gold medals at St. Louis.

"Tiger Tongue" is the name of a new bromide paper issued by Messrs. Elliot & Sons, Barnet. It is of specially rough texture, and is intended for exhibition work.

A Fourth Lantern Lecture is being circulated by Mr. C. P. Goerz, 1–6 Holborn Circus, E.C., the subjects of the slides being derived from the recent Goerz competition.

"The Primus Lanternist's Book," 1904-5, appears again from Messrs. Butcher & Son, Camera House, St. Bride Street, E.C. A copy will be sent gratis on application.

A Post Card Camera is a new introduction of the Stereoscopic Co., 106 and 108 Regent Street, W. It is for plates $5\frac{1}{4} \times 3\frac{1}{4}$, on which also a pair of stereoscopic pictures can be taken.

Crossed Swords Pigment Paper. — Messrs. Chas. Zimmerman & Co., 9 and 10 St Mary-at-Hill, now issue complete sets of apparatus and materials for this "gum" process, prices 4s. to 5s. 6d.

A Cinematograph Lending Library. — Messrs. Gaumont of Cecil Court, London, W.C., have drafted a scheme whereby the private exhibitor may obtain a variety of cinematograph films at the rate of a guinea a night.

Xmas Greetings.—Messrs. Houghtons, Ltd., 88 and 89 High Holborn, announce a series of private Xmas cards—the "Grosvenor"—in which spaces are provided for the insertion of prints. Special offers are made to dealers in connection with these goods.

Messrs. Küntzen, of 92–96 Bishopsgate Street Without, E.C., now represent the Genthin Cardboard Works in this country and the colonies. They thus become agents for the well known Oeser foils and the various cardboards made by the Genthin drying machines.

Court Post Cards are a new issue of the Rotary Photographic Co.'s. They are exactly quarter-plate in size, and are made with rounded corners. They are obtainable in both Rotograph (bromide) and Rotox (gaslight) both matt and glossy. Price 8d. per packet of twelve, with two masks, or 5s. per 100.

"Sing a Song of Velox" is what Messrs. Griffin do in a little manual (2d. only, post free) all about gaslight printing as it applies to the Velox paper. Indeed, the song is a madrigal with Chapman Jones, John A. Hodges, Frank M. Sutcliffe and Mrs Carine Cadby in the parts. This new "Velox Manual" is instructive, and, thank goodness, it is vastly entertaining also.

Houghtons' List for 1904-5 is a bulkier volume than ever before, and approaches very close to a thousand pages. Known and esteemed of all classes of photography, professional, amateur and dealer, it scarcely needs any further introduction by us. But we will say that it is one of the two or three volumes which we never allow to be missing from the shelf above our office table.

Griffin's Al Bromide Paper is now issued in a new grade, the "snow-white." It is a very rapid paper which gives also vigorous prints with strong blacks, such as are more commonly obtained on a slow emulsion. A convenient feature of Messrs. Griffin's packing is the putting up of the larger sizes in packets of four pieces. The paper is made up as postcards also in 1s. and 6d. packets.

Seltona Xmas Post-cards. — The Leto Photomaterials Co., Ltd., 9 Rangoon Sreet, E.C., issue the well known Seltona print-out self-toning emulsion on postcards of the standard and dainty "Mikro" sizes. The cards have rounded corners and bear an appropriate Xmas greeting on the address side. They are issued in both the matt and glossy variety.

New Velox Post Cards.—Messrs. John J. Griffin & Sons have introduced post-cards of "Art" and "Portrait" Velox, the former for semi-glossy brilliant effects and the latter for half-matt soft prints. The shilling packet contains eighteen of the "Art" or twelve of the "Portrait." Carbon Velox post cards, we may add, are now sold at eighteen a shilling instead of twelve as hitherto.

Artificial Light Portraiture.—Messrs. Houghtons, Ltd., are issuing specimens of their very excellent Ideal lamp (see our notice in March last), and have arranged for demonstrations at 88–89 High Holborn.

The Warwick Brooks electro-flash installation is also supplied by Messrs. Houghtons, and should repay inquiries, as it is powerful, portable, electrically ignited, and moderate in price.

About Wratten Plates.—Messrs. Wratten & Wainwright offer to send a book about themselves and their plates to anyone who will ask for it, and, as they are the earliest people in the dry plate industry, and as they have some useful things to say on speeds, screens, packing for the tropics, etc.: and as furthermore, they illustrate their pages with a good deal of excellent photography, their booklet is one worth possessing.

"Chic" mounts are a series of cards of Kodak, Ltd., which will strongly appeal to workers of refined taste. They are made from soft, thick boards, deckle-edged, and in a series of green, brown and grey art shades. They include mounts of both paste-down and slip-in varieties, and are made, of course, for all shapes and sizes of print. They are likewise issued as small wall calendars. An illustrated list from Messrs. Kodak, Ltd., 57 and 61 Clerkenwell Road, E.C., describes their infinite variety.

Stolen.—Messrs. Goerz ask us to notify the theft of the following articles from a messenger of the City Sale and Exchange, Aldersgate Street, on November 4th:—One Anschutz camera, half-plate; one double anastigmat Series B, No. 2, 142245; three double dark slides; one case; one double anastigmat, Series I, B3, 132020; Anschutz camera, quarter-plate, with double anastigmat 111/0 153740, six slides and case, and extension.

Anyone hearing anything of these goods is asked to communicate with Messrs. Goerz, the City Sale and Exchange, or the City Police.

Rotary Carbon Tissue.—Last month's article on progress in color photography referred to the celluloid carbon tissue (pigment films) of the Rotary Photographic Co. The company are also introducing ordinary carbon tissue under the trade designation "Rotary." It is issued in twenty different colors at a uniform price of 5d. per dozen quarter-plate sheets. Some of the insensitive tissue, sensitised by ourselves, turned out very well in printing, developing freely and giving prints of rich tone and clearness in the high-lights. The company's instructions are quite a small treatise on carbon work, and should successfully introduce the tissue to new users.

Metotypes.—Processes for producing prints on a flexible metallic support have been known in the past, but none of them have brought this type of picture to the door of the amateur or professional photographer as the Metotype now promises to do. The sensitive material of the metotype is a bromide emulsion, and the practical part of the process is therefore bromide printing pure and simple. Underneath the emulsion is a film of metal—gold, silver, or copper—and underneath this again a layer of lacquer and rubber, which insulates the metal from the paper, and obviates the damage to the former when the wet prints are being handled.

The brilliant effects obtainable on the paper give it a unique position among printing processes. A similar effect can be obtained by transfer of carbon-tissue to a metallic support, but at immensely greater cost in time, money and labor. The time taken to wash a metotype is less than the time needed for a bromide print, as the emulsion and its paper support are separate.

Both papers and plaques are supplied by the Metotype Co. at prices from 1s. 6d. per dozen quarter-plate pieces. Plaques and papers for carbon transfers are also supplied, and a special make of portraits for watch-cases, etc. A handsome prospectus of the process, containing an actual metotype print, will be sent gratis by the company from 147 Seven Sisters Road, London, N.

Digitized by Google

TRADE INTELLIGENCE

New Businesses, Changes of Address, etc.—*Francesco Tabone*, 268 Sda Reale, Valletta, Malta, announces that his firm is no longer "The Grand Studio—John Malha & Co.," but simply "The Grand Studio."

BE BRIEF!—*We reserve the right of condensing all correspondence, but undertake to leave the meaning intact.*

Personalities barred. Whenever a man's opinions are attacked, with mention of the man's name, we wait until a proof can be sent, and the attack and reply published together.

Anonymous letters are strongly objected to, and those which are not ACCOMPANIED *by name and address of writer, for our own information, go into the W.P.B.*

A "Constructive Criticism" Postal Club.

A "Would-be Picture-maker," in sending us some very promising work for criticism, writes:—"Does it not seem a great pity that you and your critics should give so much time just to help one struggling amateur? I know that you sometimes reproduce a criticism in *The Photogram*, but could you not arrange that all of them, or many of them, should be placed in a folio and posted in turn to all the different people who send their pictures?"

[The suggestion is one which we shall be glad to entertain, if some assurance can be obtained that say twenty earnest workers will take an active interest in such a circulating portfolio. It will probably be necessary to have prints submitted in duplicate, and mounted on a mount of a particular kind. The members will state their pictorial aims and give technical particulars as to the prints. They will undertake to criticise the prints in the folio and promptly forward it to the next member on the list. What say other "would-be picture-makers"? We shall be interested in hearing from them before taking further steps towards the establishment of a club on these lines.—EDS.]

Wide-Angle.

DEAR SIRS AND MADAM,—I have been reading with a great deal of interest the little book published by you entitled *The Lens*, by Thos. Bolas and George E. Brown, and I have found it very instructive and satisfactory.

I have noticed, however, a paragraph (or several successive ones) in Chapter XI. on "Choosing a Lens," which surely must be founded upon a mistake as to the physiological optics of the human eye. It is the quotation on pages 121-3 from the notes of F. J. Allen, M.A., M.D., published in *The Photogram*, November, 1901. Surely the author of those notes has forgotten that the human eye possesses an automatic diaphragm, the iris, which cuts off the extremely oblique rays drawn in the figure on page 122, and that the extreme limits of the retina, or even those parts of it beyond half way from the centre, receive few, if any at all, of these oblique rays, *unless the eyeball is turned in its socket*. The extension of the retina is to provide for the reception of these rays when the axis of vision is turned away obliquely from the direction towards which the face points.

It seems to me that if this motion of the eyeball is to be included the fact should be stated; and if it is included, then the comparison between the eye and the ordinary camera fails. It would then resemble more nearly an instrument of the type of the Panoram kodak.

On the top of page 122 is the sentence ending with "include an angle of 160°, which is well within the capacity of the retina," from which it might be inferred that the angle of view of the human eye *when fixed* is equal to 160° or more!!

The statement is usually made, I think, that the human eye ordinarily includes an angle of view of approximately 60°, and that when a photogram includes much more than this the picture is different from what we perceive with the human eye when rigidly fixed in one direction, but may appear correct when the eyeball is turned to one side or the other, which is done easily and almost automatically and instinctively. Of course, with two eyes in use the angle included is somewhat greater, but surely not to the extent indicated, and no mention is made of both eyes being used at one time.

Would it not be well when issuing a new edition of this very useful book to add a footnote to this page correcting the erroneous impression the statements certainly appear to make?

R. HAINES.

Philadelphia.

Professor Allen writes:—There are several fallacies prevalent among photographers (and others) concerning the optical properties of the human eye; and it was expressly to disabuse people of these that I made the diagram and wrote the paragraphs to which Mr. Haines refers.

It seems that in addition to any errors that I tried to dispel—errors which are excusable in persons who have not studied the physiology of the eye with professional thoroughness—Mr. Haines holds some errors on quite elementary matters: *e.g.* he seems to think that the diaphragm limits the *field* of a lens, and that movement of a camera as a whole can alter the angle of its lens. Let me, then, state a few simple facts for his guidance.

(1) In mathematical language the "limiting value" of the angle of a lens is 180°—*i.e.* the widest-angled lens that could exist in theory would have an angle of 180°. In practice this angle cannot be quite attained; but the human eye lens (or lens combination) comes marvellously near to it, its angle exceeding 160°, and the retina covering the same angle.

(2) While the angle of the eye is so wide, the region of *distinct vision* is extremely narrow, even minute, as mentioned in my article in *The Photogram*.

(3) The angle of the eye cannot be increased by moving in its socket; for the lenses and the retina move together, like a camera on a turntable. The axis of vision always passes through the same point of the retina.

(4) The corneo-aqueous lens is the principal lens of the eye; the crystalline lens is a minor accessory for focussing purposes.

(5) The iris, like any proper diaphragm, lies at the "optical centre" of the eye, and has no effect on the lens-angle or the size of the field. It cuts off the aberrant rays, (*i.e.* those that go in the wrong direction), but does not cut off the rays going to the margin of the retina.

Mr. Haines will probably not be convinced by my statements. The only way to get a proper grasp of the subject is to study the eye in a physiological laboratory. When Mr. Haines has carefully dissected a hundred eyes, with the assistance of the best authorities on physiology and optics, his opinions will certainly be changed.

PRINCIPAL CONTENTS.

Glycerine Development of Gaslight and Bromide Paper. By Clarence Ponting.
Two Continental Pictorialists.
A Stand Camera in the Hand.
Critical Appreciation: the Work of Guido Rey.
The Portrait and the Studio.—IX. Elliott & Fry and the "Invitation" Portrait.
Clouds and Lantern Slides. By Harry Holt.
Mounting the Exhibition Print. By Fredk. H. Evans.
Fire! Fire!
From my Note-book. By Alex. Mackie.
Seashore Photography. Prize Competition No. 11.
What's What.
Forthcoming Exhibitions and Competitions.
Trade Notes. Correspondence.

The Process Photogram

contains the whole of *The Photogram plus* the following articles and notes relating to photo-mechanical processes:—

Is the Process Man a Professional?
Photo-Lithography in Color. By F. W. Plews.
Lantern Slides from Screen Negatives.—A New Process by F. E. Ives. By F. C. Beach.
A Metallic Resist.
Half-tone Overlays—an Appreciation.
Transfer Methods applied to Half-tone, Photo-Litho, etc.
Some Questions—Pertinent and Impertinent. By "The Town Traveller."
Screen Sweating.
Wet Collodion *versus* Bromide Emulsion.
Current Topics.

Digitized by Google

No. 121.—JANUARY, 1904.

THE PROCESS PHOTOGRAM AND ILLUSTRATOR.

MODIFIED COLLOTYPE FOR BEGINNERS.

By Henry George Montagu Barstow.

I THINK that a large number of photographers and amateurs would be glad to know of a simple method of reproducing their own pictures and photograms without having to call in the aid of the "process man," and without being obliged to set up the plant necessary for a "process" studio: at least such was my own case. What I purpose to set forth here, for the benefit of my brother amateurs and professionals, is a simple method of photo-mechanical reproduction which I have found most simple and successful. Of course I take it for granted that my reader has a knowledge of photography and also possesses the usual photographic outfit, including a more or less convenient dark room; with this knowledge and such conveniences at his disposal, he will find that no great skill, and very little outlay, will enable him to print by this process a limited number of copies from practically any class of negative which he may choose; these prints costing very little, and being equal in richness of tone and color to carbon prints, from which indeed they are not easily distinguishable, and possessing a quality altogether superior to any collotypes I have ever seen. The process, in theory, resembles collotype more closely than any other of the usual photo-mechanical processes, but it is distinct from it in so much that there is none of the difficulty connected with the coating of plates, necessitating hot solutions and hot ovens for drying the plates, or with the very unpleasant cleaning of the glasses: all of which make a regular workshop indispensable, to say nothing of the considerable training required for such work.

The reader who takes the trouble to follow the simple instructions set forth, will, with the exercise of a little patience and with very little practice, be able to turn out beautiful prints in a remarkably short time.

a. The Outfit.—Supposing the worker of this process has already a moderately well equipped, ordinary photographic dark room, I will proceed now to enumerate the various implements and indispensable tools required; these he can augment at his own discretion, according to the amount of

Digitized by Google

work he desires to turn out, but at first it may be best only to procure the absolutely essential, and add to the stock as occasion arises. I shall therefore restrict my list to the strictly necessary, and shall subsequently refer to it, as the explanation of the manipulations proceeds, mentioning each tool as I speak of its use.

a, workshop or room; *b*, table for inking, and another; *c*, levelling stand and spirit level; *d*, some sort of cupboard and a box; *e*, two inking slabs and another; *f*, two rollers (at least) and shelf; *g*, two or three india-rubber pads; *h*, printing inks and a tin of varnish; *i*, spatula and palette knife; *j*, glycerine, turpentine, ammonia ·880, bichromate of potassium, ox-gall; *k*, measuring glasses, two flasks; *l*, filter papers; *m*, paper for printing; *n*, paper or tinfoil, for masking negatives; *o*, varnish; *p*, two or three small sponges; *q*, a few small bowls and dishes and plenty of rag; *r*, porcelain plate-washer, dishes, racks; *s*, the press.

a. Workshop or room.—This can be quite small, provided there is a decent light, that it is fairly dry, and that some kind of heating apparatus is fixed, a stove being preferable to an open range, which is apt to induce too much dust. A back kitchen is by no means to be despised, especially as water is sure to be laid on, which is a great convenience.

b. Table.—A good solid table, firm, with as true a top as possible; the regulation kitchen table will answer the purpose admirably. It is convenient to have another table as well.

c. A levelling stand and spirit level, though not absolutely essential, will be found very useful.

d. Cupboard.—You should have some kind of cupboard in which to keep your paper and other materials separate from your other photographic impedimenta, and also provide yourself with a box or basket for rags.

e. Inking slabs.—These may be old litho stones, or pieces of marble, or tin of a certain substance, or a couple of pieces of thick glass—preferably finely ground on one side. If you elect to have tin inking slabs, they must be screwed on to the table; if of glass, they may be fixed with a small fillet of wood to keep them steady, and should have also a piece of clean white paper underneath, to show the color of the ink. Litho stones or marble are kept in position by their own weight.

f. Rollers.—You will require two, preferably three, rollers. The first one should be compo, and can be either in a handle or litho stock. This is used for breaking up the ink. You will require one, or preferably two, gelatine rollers in handles for inking; these rollers must be as long or longer than your plate is wide, but should not be too large or heavy. There is a convenient roller supplied by the Autocopyist Co., Queen Victoria Street, which has a handle, enabling it to be put on the table, without the latter coming in contact with the rollers. If you use the ordinary shaped handle, you will require a couple of little blocks or rests, to prevent the gelatine touching the surface of your table; the gelatine must never be allowed to rest against anything. If your rollers are in ordinary handles, you must keep them on a shelf that has notches cut out to fit the handles, and keeping the rollers upright; and if you have any on litho stocks, you can get convenient brackets at any dealer's.

g. India-rubber pads.—You should supply yourself with two pads of good quality—the best—rubber; they should be a little larger than your plates, and about ¼ to ⅜ of an inch thick. You will find a third pad, which can be thinner, a convenient support for the plate while inking.

h. The ink.—This must be collotype or "phototypie" ink—not litho. It is obtained in small tin pots, and should never be left about with the cover off, as the air causes the surface to dry. Lorilleux & Co., Paris, have an agent in Maclean's Buildings, Chancery Lane, and they publish a compre-

Digitized by Google

hensive catalogue. The best colors to use are the browns, reds, and blacks. The fancy colors—as, for instance, the madders—are too sticky, and the pale yellows and greens have not sufficient depth. There are other makers, notably Lefranc of Paris, who will forward by post direct. A tin of varnish completes this part of your requirements.

You can buy the ink in small quantities from 100 gms.; but ¼ or ½ lb. keeps better, and 1 lb. is not a large quantity, as the ink is very heavy.

i. Spatula and palette knife.—Ordinary painter's tools.

j. Chemicals.—You will possess most, if not all, the chemicals required, which are very few and simple. A good supply of pure glycerine, turpentine, methylated spirit, a little ammonia ·880, ½ lb. of bichromate of potassium, a little ox-gall (which can be had at any artist's colorman), and some French chalk.

k. Measuring glasses.—You will probably possess a couple of flasks, either ½ litre or litre, according as you wish to do occasional or regular work. A glass funnel is also necessary.

l. Filter papers.—A packet of ordinary grey filter papers.

m. Paper.—Paper for printing upon: this may be any sort you desire, either tinted or white; very artistic results can be obtained on drawing papers—such as Whatman's or others; but the paper should not be too rough, or it soon wears out the surface of the plate, the grain becoming impressed upon the gelatine and limiting the number of prints obtainable. Enamel paper can be used, and this gives the prints the exact appearance of photographic prints.

n. Masks.—Masks can be made of tinfoil or any tough but thin paper.

o. Varnish.—You will want also some negative varnish and a brush.

p. A few small Turkey sponges.

q. One or two small dishes, either of porcelain or enamelled tin, to contain the "etch" and turpentine: and above all provide yourself with plenty of rag—some that is fine and has no "fluff"—for dabbing the surface of the plate. Old linen which has been often washed is best for this, and also some common white rag for cleaning purposes.

r. Washer.—A porcelain (for preference) washing trough, developing dishes with lifters, used in the preparation of the plates, and one or two good wooden photographic plate racks—*i.e.* drying racks for negatives.

s. The press.—The press is a matter which must to a certain extent be left to the option of the worker. Of course, there is no press specially made for this class of work, but there are several in the market which fulfil all the requirements. These vary very considerably in size and in price. The best thing I can do is to point out the requirements, and leave the choice of a press to the prospective worker, who will doubtless be greatly guided by the amount of money he is prepared to lay out. All that is absolutely necessary is a press which has a flat and true metal or wood platform upon which the plate itself, resting upon the india-rubber pad, is placed. This platform must therefore be somewhat larger than the plate you desire to print from, and may be up to any size. The pressure is obtained vertically, either by the elevation of this platform against a fixed block of metal above it, as in a "blocking" press, the pressure being adjusted by the use of a screw and the press worked with a lever; or the upper plate descends upon the lower as in the vertical screw presses, or in various sorts of proof printing presses used for other processes. It will also be seen that an ordinary well made and well adjusted copying press—as used for copying letters, etc.—answers to all requirements, and very good impressions can be obtained by the use of one of these. The disadvantages of the ordinary copying press are obvious: they are not as a rule well adjusted, and the pressure is not always even; the labor of turning the screw up after the

Digitized by Google

impression has been taken, and down again for the next print, is very heavy work. Then the difficulty of calculating the amount of pressure is another obstacle, as it must be judged by the operator, who, as he becomes tired, is likely to diminish the pressure given.

A press which can be adjusted by the use of a screw that keeps the pressure even for successive pulls, is a great desideratum; and one that works with a handle or lever causes little or no fatigue. The ordinary collotype press is too heavy, and the scraper system is sure to damage the film in a very short time. The light "machines phototypiques" made by Voirin of Paris, and which work with a cylinder, would appear to get over this difficulty, but they do not seem to have an agency in this country.

I myself use an ordinary "blocking press," and find it most satisfactory. Any of the makers of presses will send catalogues, and the worker can then go and see the machines for himself, and he will have no difficulty in finding a suitable one; very often a second-hand machine can be picked up cheaply either at a sale room or by advertisement.

In my next article I shall come to the preparation of the plates.

PRINTING PLATES DIRECT FROM NEGATIVES.

A process depending on the sensitising of the negative itself with bichromate has been patented * by two Italian inventors who describe it as "archetype." So far as can be gathered from the full specification, the process is as follows:—

Bichromates are used in order to produce a positive relief picture, direct on the negative itself, avoiding thus all other secondary operations, such as the reversing of the picture, reproduction of other positives, and the like. After having obtained the negative, the same is developed in a solution of amidol and sulphite of soda (other developers not excluded), and afterwards fixed in a bath of hyposulphite of soda and then dried in a dark place.

The dried negative is then immersed in a solution of bichromate of potassium, or bichromate of ammonium, and alcohol in suitable proportions according to the nature of the negative. Afterwards, the negative is again dried in a dark place, and is then placed on a specular surface, such as a silvered plate, or other polished metal plate, or a layer of mercury, or any other reflecting surface. The film placed on the reflecting surface is now exposed to the action of actinic light with the side of the glass plate turned towards the natural or artificial light for the necessary period, which depends on the intensity of the light. After this, the negative is thoroughly cleansed in fresh water, and after it has been completly dried, is ready for the photo-archetype. This photo-archetype may be used for producing impressions with printing ink on paper, cloth, or any other even surface. The positive picture might also be detached from the glass plate, and applied to a surface of celluloid, or on a metal plate for ordinary typographic uses. This positive relief picture can also be used for the reproduction of printing blocks for galvanoplastics or typographic blocks.

This new photo-archetypy may also be applied to three-color photography, by transforming the three monochrome negatives into three photo-archetypes, by which the positive picture is to be impressed with the respective colored printing inks without the aid of the usual screens.

* Eng. Patent No. 19,434, 1903, by Maurizio Barricelli and Clemente Levi of 72–74 Via Della Stamperia, Rome.

Digitized by Google

PROCESS AT THE TYNEMOUTH PHOTOGRAPHIC EXHIBITION.

THE special loan exhibition of the Tynemouth Photographic Society, to which a brief reference was made last month, was held in the Tynemouth Parish Hall from November 25th to 28th. The collection was of a kind to which the attention of photographers might well be drawn more closely, for it set forth in a very complete manner the many applications of the photographic method in the reproduction crafts. The exhibition was not solely photo-mechanical. It included all the chief photographic processes. Perhaps it would have gained in educative value had it been broken into these two sharp divisions—photographic and photo-mechanical. A clearer view is obtained of the evolution of "process" when its stages have not to be disentangled from contemporaneous progress in pure photography. The exhibition, however, was of the greatest interest, and Mr. Walter S. Corder, J.P. of Tynemouth, who was largely responsible for bringing it together, may well receive the thanks not only of photographers along the Tyneside, but of the photographic community generally. The chief photo-mechanical exhibits were as follows:—

Photogravure.—Early examples lent by C. H. Talbot, T. Bolas, Major-General Waterhouse, and others. Recent examples by the Swan Electric Engraving Co. Plates by W. S. Corder.

Photo-galvanography (Paul Pretsch, 1856).—Lent by Major-General Waterhouse and J. M. Turnbull, Edinburgh.

"*Swelled gelatine.*"—Lent by Artists' Illustrators, Ltd., London, and by Major-General Waterhouse.

"*Photo-mezzotint*" (J. W. Swan, 1864).—Lent by the Swan Electric Engraving Co.

Woodbury-type (Walter B. Woodbury, 1866).—Prints, relief and mould lent by Eyre & Spottiswoode, London.

Stannotype (Woodbury).—Prints lent by Major-General Waterhouse and A. J. Newton of the Bolt Court School of Photo-Engraving, London. Mould lent by T. Bolas.

Photo-filegrain.—Lent by T. Bolas.

Photo-lithography (Poitevin, 1859).—Early examples lent by Major-General Waterhouse, Walter Pouncy, etc.

Chromo-photolithography.—Stages in the "Photo-stone" process. Lent by the Linotype & Machinery Co., Ltd., London.

Paprotype (Sir Wm. Abney's process).—Examples lent by Captain Shelley, R.E., Chatham.

Paprotint (Husband's process).—Prints lent by A. J. Newton, Bolt Court School of Photo-Engraving, London.

Collotype (Poitevin, 1855).—Prints in monochrome and colors lent by Thompson & Lee, Newcastle, H. Kleinmann & Co., Haarlem, the Autotype Co., Major-General Waterhouse, and the editors of *The Photogram.* Plates lent by Thompson & Lee and the Autotype Co. Examples of "Phototype," "Ink-photo," "Photo-Autocopyist" and "Photochrome" were lent respectively by Bemrose & Sons, Derby, Sprague & Co., London, the Autocopyist Co., London, and Walter S. Corder.

Photo-zinco (Gellot, Paris, 1867).—Prints lent by R. J. Bertram, Newcastle, Major-General Waterhouse, C. J. Spence, and W. S. Corder. Line blocks lent by C. J. Spence.

Digitized by Google

Half-tone.—Pretsch's "natural grain" (1860). "Dallastint" (1863). Block lent by T. Bolas. Prints by Major-General Waterhouse. Mechanical grain (Woodbury and Ives, 1878 to 1882). Examples lent by A. J. Newton, Bolt Court School of Photo-Engraving, London.

Examples of Luxotype (Brown, Barnes & Bell, Liverpool, 1882) were lent by T. Bolas, and "Gigantography" was represented by Hunters, Ltd., London. Warnerke's photogravure method, with silver salts in place of chromated gelatine, and typographic print by the MacDonough-Joly process were lent by the editors of *The Photogram*. Three-color work was represented by prints lent by Edmond Evans, Racquet Court Press, London, W. S. Corder, W. Parry, and Percy Corder. A complete set of blocks was lent by Gerard Meynell, Westminster Press, London.

Non-photographic processes formed a large section comprising artists' original work and reproductions in woodcut, etching and engraving.

THE COLOR-SENSITIVE DRY PLATE IN HALF-TONE WORK.

(Translated from *Zeitschrift für Reproduktionstechnik.*)

THE question of using a dry plate of some kind or other in half-tone negative-making is one which is rapidly coming to the front. In Germany, so far as we know, wet collodion is still exclusively used for half-tone work, except in cases where the color of the original makes it necessary to employ collodion emulsion. In England, on the other hand, a special dry plate is largely used for the production of screen negatives for tri-color work, to the exclusion, almost, of other sensitive materials.

The subject is one of special interest in view of the introduction of new color sensitisers, such as ethyl red, which render possible the employment of one and the same plate for all three color-sensation negatives, and this even with comparatively brief exposures. Under these circumstances tri-color work is rendered a far simpler operation, and its results distinctly more uniform and automatic. The great general sensitiveness of plates bathed in ethyl red, or with ethyl red in the emulsion, as well as their even sensitiveness to color, permit such short exposures that importance can be attached to the method of preparing the three-color sensation negatives direct, through the cross-line screen. Whether or not this method can be made to give really useful results depends only on the properties of the dry plate in relation to the screen.

In England special photo-mechanical plates are made which should answer for the purpose. These plates differ slightly among themselves, but on the whole resemble the ordinary dry plate. In the matter of sensitiveness they come between a good lantern or transparency plate and the usual highly sensitive gelatine plate. Their other properties occupy a similarly mean position. They develop more quickly and are more quickly washed; they intensify and reduce better than very rapid plates, and they give a sharper and finer dot and a more fog-free image than do highly sensitive plates. Lantern or transparency plates, however, save for their very slight sensitiveness, are far more suitable for "process" purposes. They are worked much more quickly in development and succeeding operations, and, when bathed in ethyl red—which renders them highly sensitive—give clear and sharp screen images if properly treated. The chief difficulty is in reflection from

Digitized by Google

the back of the plate. It is astonishing to notice the superior results given by a backed plate compared with those from one unbacked. The extraordinary difference in the sharpness of the dots can be seen by exposing through the screen a rapid plate with half only of its posterior surface covered with the backing mixture. The difference is just as decided when the plate comes to be etched. Even a rapid plate gives fairly good half-tone dots if it is properly backed. The great saving of time—possible by direct tri-color through the screen — is itself a strong argument for a careful investigation of bathed and backed transparency plates for the process.

[It should be borne in mind that a panchromatic plate, by its sensitiveness to red rays, calls for a black backing. Indian ink, recommended by Mr. Cadett, who first called attention to this point, is the best basis for a backing mixture. A suitable formula (from *Figures, Facts and Formulæ*) is as follows:—Caramel, 1 oz.; gum solution, 1 oz.; Indian ink (ground with water to the thick mixture used by draughtsmen), enough to give a dense black film on glass.

For regular use by the process worker, a backing sheet, despite the charges of uselessness which have been made against it, would answer as well as the backing, and would be infinitely more convenient in use. So long as care is taken to press it in contact with the back of the plate, its efficiency as a preventative of halation will be apparent. The plates should be laid face down on clean paper, and the backing sheet pressed on it with a heavy inking roller. A suitable composition for the backing sheet is:—Gelatine, 10 parts; water, 75 parts; glycerine, 60 parts; Indian ink, to give a deep color. Stout paper is coated with this hot and fluid mixture.—EDS.]

DENSITIES OF CONCENTRATED NITRIC ACID AT DIFFERENT TEMPERATURES.

By V. H. Veley, F.R.S., and J. J. Manley.

(*A Paper read before the London Branch of the Society of Chemical Industry, and reprinted from the Society's Journal of November 30th*, 1903.)

IN the present communication it is desired to place upon record numerous determinations of the densities of concentrated nitric acid at different temperatures in a series of tables, as it appears that such numbers may supply a long felt want and facilitate calculations.

As we have fully described our methods in previous publications (*Phil. Trans.* (A.), vol. cxci., 365 (1898), and *Proc. Roy. Soc.*, vol. lxix. 86 (1901)), we only give a short summary of them herein, and allude briefly to the more especial points of interest.

Historical.—Kirwan, in 1790 (*Irish Acad. Trans.*, vol. iv. 3), published the first tables of specific gravities of nitric acid in terms of percentages: he deduced these by mixing weighed quantities of acid of the highest specific gravity (1·55) obtainable with water, neutralising with sodium carbonate, taking the specific gravity of the sodium nitrate solution formed, and preparing a solution of the same gravity from weighed quantities of sodium nitrate.

Ure (*Quart. Jour. Sci.*, vol. iv. 291 (1818)) obtained his numbers by mixing known weights of water and nitric acid of specific gravity 1·5, which he regarded as that of anhydrous nitric acid, HNO_3.

These tables were reproduced in the earlier manuals of chemistry, but both were regarded as inaccurate.

Digitized by Google

Thénard and Payen also published sets of tables, which failed to attract attention.

Kobb (*Ann. Chem. Phys.* [4], vol. x. 140 (1867)) published a more complete and accurate set of tables; he purified the acid by distillation over silver and barium nitrates and subsequently by fractional distillation; he analysed the several mixtures of acid and water by the addition of a known weight of calcium carbonate in excess, and subsequently determined this excess. His results, which were those of densities as distinguished from specific gravities, were for several years regarded as the most accurate, and were reproduced more or less fully in the various text-books of chemistry.

Lunge and Rey (*Zeits. f. angew. Chem.*, 1891, 167, and 1892, 10) published the most complete table of densities taken at 15° C., referred to water at 4° C., and corrected for air displacement; they also gave certain corrections to be applied for presence of nitrogen peroxide and temperature between 13° C. and 17° C. Their process of purification consisted in distilling concentrated nitric acid with sulphuric acid *in vacuo*. Their analytical methods were not widely different from those herein described. Their results, to which further allusion will be made, are now more generally quoted in technical manuals and calendars.

In the course of our work, carried on from 1894 to 1901, on the physical properties of nitric acid, we made about 250 determinations of densities at the temperatures 4°, 14°·2, and 24°·2 C. respectively.

Purification of Acid.—For acids below 68 per cent., purified acid of approximately this concentration was fractionally distilled *in vacuo* in an apparatus constructed wholly of glass. For acids from 68 to 95 per cent., acid of the former concentration was distilled quickly with an equal volume of sulphuric acid, the distillate re-distilled over silver and barium nitrates. The acid thus obtained was fractionally distilled *in vacuo* in a special apparatus, also constructed of glass. The nitrogen peroxide came over in the first portion; the second portion consisted of acid of 98 to 99·5 per cent., while the greater part of the water was left in the residue.

The sample of acid thus obtained was quite colorless and free from all but insignificant quantities of hydrochloric and sulphuric acids. It was used for most determinations, being diluted as required with recently melted ice, obtained by freezing water frequently re-distilled.

In order to obtain anhydrous acid, namely, 100 per cent. HNO_3, the 99·5 acid was fractionally distilled in an apparatus, based upon the principle of Carré's ice machine, and, after several trials, acid of 99·97 per cent. was obtained, which, so far as we are aware, appears to be the most concentrated sample as yet prepared in a colorless condition.

Analytical Methods.—Unfortunately, concentrated nitric acid cannot be kept, owing to the formation of nitrogen peroxide, so the more accurate method of mixing weighed quantities of acid and water is not available; the less accurate analytical methods were therefore applied. Suitable quantities of the acid solutions were weighed out with water, and the amount of acid determined by standard soda solutions (prepared from sodium), which were standardised against solutions of hydrochloric and sulphuric acids. The strength of the former was ascertained by (i) sodium carbonate; (ii) metallic silver: of the latter by (i) sodium carbonate, (ii) barium sulphate, and (iii) in some cases by density determinations. But it is doubtful if volumetric methods can be carried beyond an accuracy of ±1 part in 1,000 parts, whereas density determination can be carried to an accuracy of ±1 part in 75,000 parts.

Density Methods.—Various modifications of the Sprengel U tube were tried to meet the difficulties of the high coefficient of expansion (in round

Digitized by Google

figures twenty-seven times as great as water) of the concentrated acid and its hygroscopic character; finally the following form was adopted:—A piece of thick-walled capillary tubing was sealed on to one limb of the U, on which the fiducial mark was etched; the upper portion was blown out into a bulb, the other limb was drawn out to a point.

From a number of such tubes made from the same batch of glass, a pair could be selected the weight of which did not differ from one another by more than a fraction of a gram: the lighter was used for a counterpoise. The advantage of this method is that the liquid only is weighed against glass or platinum, and as the external areas are practically equal, the weighings are independent of the hygrometric state of the air and change in barometric pressure. The weighings were corrected to a vacuum, according to the data given in manuals on physics, and the densities reduced to 4° by the values given for the density of water at the three temperatures in Rossetti's tables.

The temperatures were recorded by a thermometer, graduated to 0°·1, and standardised against (i) a Kew standard, and (ii) a standard by Baudin.

Results.—As stated above, the results were obtained at 4°, 14°·2, and 24°·2 C., but in the present communication those at the second temperature have been corrected to 15°, by the value of k obtained from an equation $D_4 = D_{14\cdot2}(1 + kt)$, and those at the third temperature corrected to 25° C. in like manner. The densities have been plotted out in terms of percentages, the former as ordinates, the latter as abscissæ, upon a scale of 1 mm. for 0·001 in density and 0·1 in percentages. The results have been smoothed by drawing mean straight lines with a flat glass ruler, but for the irregular portion from 93 per cent. to 100 per cent. curves were drawn freehand, a method at its best unsatisfactory, but the only one available. The figures in the first, third and fifth columns in the table below have been ascertained by the readings on the squared paper. The figures for 10° in the second column and for 20° in the fourth column have been obtained by interpolation, but adjustments were in some few cases necessary to meet differences arising from slight variations in the coefficients of expansion. Our observations on the physical properties of nitric acid have shown that variations occur at 63·6 per cent. ($HNO_3 2H_2O$), at 70 per cent. ($2HNO_3 3H_2O$), and 77·9 per cent. ($HNO_3 H_2O$); hence the differences between two successive figures in the percentages column are not constant. We have recently (*Chem. Soc. Trans.*, 1903, 1015) called attention to the irregular portion from 94 per cent. to 100 per cent., and compared our observations with those of Knietzsch (*Ber.*, 1901, 34, 4069) on sulphuric acid.

The densities in the table have been commenced from 1·400 at 4°/4° C., as it is understood that for technical purposes acids of lower density need not be considered. It is probable that the figures given in the table could be made applicable for results at 30° C. by means of the following corrections:—

Values to be subtracted from Values at 25°/4° C.	Percentages.
0·007	65— 65
0·008	65— 85
0·009	85— 93
0·008	93 - 98
0·010	98—100

It is, however, to be remarked that we observed that acids of concentration of 90 per cent. and upwards could not be heated above 25° C.

Digitized by Google

without decomposition setting in with formation of nitrogen peroxide, though there are not sufficient data for determining whether the result is due entirely to heat, or, as more probably, partly to heat and partly to light.

Densities.						Densities.					
At 4°.	10°/4°.	15°/4°.	20°/4°.	25°/4°.	Per cent.	At 4°.	10°/4°.	15°/4°.	20°/4°.	25°/4°.	Per cent.
1·400	1·392	1·385	1·378	1·371	62·3	1·457	1·447	1·439	1·432	1·424	74·2
1·401	1·393	1·386	1·379	1·372	62·5	1·458	1·448	1·440	1·433	1·425	74·5
1·402	1·394	1·387	1·380	1·373	62·7	1·459	1·449	1·441	1·434	1·426	74·7
1·403	1·395	1·388	1·381	1·374	62·9	1·460	1·450	1·442	1·435	1·427	74·9
1·404	1·396	1·3895	1·382	1·375	63·1	1·461	1·451	1·443	1·436	1·428	75·2
1·405	1·397	1·391	1·383	1·376	63·3	1·462	1·452	1·444	1·437	1·429	75·5
1·406	1·398	1·392	1·384	1·377	63·5	1·463	1·453	1·445	1·438	1·430	75·7
1·407	1·399	1·393	1·385	1·378	63·7	1·464	1·454	1·446	1·439	1·431	75·9
1·408	1·400	1·394	1·386	1·379	63·9	1·465	1·455	1·447	1·440	1·432	76·2
1·409	1·401	1·395	1·387	1·380	64·1	1·466	1·456	1·448	1·441	1·433	76·5
1·410	1·402	1·396	1·388	1·381	64·3	1·467	1·457	1·449	1·442	1·434	76·8
1·411	1·403	1·397	1·389	1·382	64·5	1·468	1·458	1·450	1·4425	1·435	77·0
1·412	1·404	1·398	1·390	1·382	64·7	1·469	1·459	1·451	1·443	1·436	77·3
1·413	1·405	1·399	1·391	1·383	64·9	1·470	1·460	1·452	1·444	1·437	77·6
1·414	1·406	1·3995	1·392	1·384	65·1	1·471	1·461	1·453	1·445	1·438	77·9
1·415	1·407	1·400	1·393	1·385	65·3	1·472	1·462	1·454	1·446	1·439	78·2
1·416	1·408	1·401	1·394	1·386	65·4	1·4725	1·4625	1·4545	1·4465	1·4395	78·5
1·417	1·409	1·402	1·394	1·386	65·6	1·473	1·463	1·455	1·447	1·440	78·8
1·418	1·410	1·403	1·395	1·387	65·8	1·474	1·464	1·456	1·448	1·441	79·1
1·419	1·411	1·404	1·396	1·388	66·0	1·475	1·465	1·457	1·449	1·442	79·4
1·420	1·412	1·405	1·397	1·389	66·2	1·476	1·466	1·458	1·450	1·443	79·7
1·421	1·413	1·406	1·398	1·390	66·4	1·477	1·467	1·459	1·451	1·444	80·0
1·422	1·414	1·4065	1·399	1·391	66·6	1·478	1·468	1·460	1·452	1·445	80·3
1·423	1·415	1·407	1·400	1·392	66·8	1·479	1·469	1·461	1·453	1·446	80·6
1·424	1·416	1·408	1·401	1·393	67·0	1·480	1·470	1·462	1·454	1·4465	80·9
1·425	1·417	1·409	1·402	1·394	67·2	1·481	1·471	1·463	1·455	1·447	81·2
1·426	1·418	1·410	1·402	1·394	67·4	1·482	1·472	1·464	1·456	1·448	81·5
1·427	1·419	1·411	1·403	1·395	67·6	1·483	1·473	1·465	1·457	1·449	81·8
1·428	1·420	1·412	1·404	1·396	67·8	1·484	1·474	1·466	1·458	1·450	82·1
1·429	1·421	1·4125	1·405	1·397	68·0	1·485	1·475	1·467	1·459	1·451	82·4
1·430	1·422	1·413	1·406	1·398	68·2	1·487	1·476	1·468	1·460	1·452	82·7
1·431	1·423	1·414	1·407	1·398	68·4	1·488	1·477	1·469	1·461	1·453	83·0
1·432	1·423	1·415	1·408	1·399	68·6	1·489	1·478	1·470	1·462	1·454	83·3
1·433	1·424	1·416	1·408	1·400	68·8	1·490	1·479	1·471	1·463	1·455	83·6
1·434	1·425	1·417	1·409	1·401	69·0	1·491	1·480	1·472	1·464	1·456	83·9
1·435	1·426	1·418	1·410	1·402	69·2	1·492	1·481	1·473	1·465	1·457	84·2
1·436	1·427	1·419	1·411	1·403	69·4	1·493	1·482	1·474	1·466	1·4575	84·5
1·437	1·428	1·420	1·412	1·404	69·6	1·494	1·483	1·475	1·467	1·458	84·8
1·438	1·429	1·4205	1·413	1·405	69·8	1·495	1·484	1·476	1·468	1·459	85·1
1·439	1·4295	1·421	1·414	1·406	70·0	1·496	1·486	1·477	1·469	1·460	85·4
1·440	1·430	1·422	1·415	1·407	70·2	1·497	1·487	1·478	1·470	1·461	85·7
1·441	1·431	1·423	1·416	1·408	70·4	1·498	1·488	1·479	1·471	1·462	86·0
1·442	1·432	1·424	1·417	1·409	70·6	1·499	1·489	1·480	1·472	1·463	86·3
1·443	1·433	1·425	1·418	1·410	70·8	1·500	1·490	1·481	1·473	1·464	86·6
1·444	1·434	1·426	1·419	1·411	71·0	1·501	1·491	1·482	1·4735	1·465	86·9
1·445	1·435	1·427	1·420	1·412	71·2	1·502	1·492	1·483	1·474	1·466	87·2
1·446	1·436	1·428	1·421	1·413	71·4	1·503	1·4925	1·4845	1·475	1·4665	87·5
1·447	1·437	1·429	1·422	1·414	71·7	1·504	1·493	1·485	1 476	1·467	87·8
1·448	1·438	1·430	1·423	1·415	72·0	1·505	1·494	1·485	1·477	1·468	88·1
1·449	1·439	1·431	1·424	1·416	72·3	1·506	1·495	1·486	1·478	1·469	88·4
1·450	1·440	1·432	1·425	1·417	72·5	1·507	1·496	1·487	1·479	1·470	88·7
1·451	1·441	1·433	1·426	1·418	72·7	1·508	1·497	1·488	1·480	1·471	89·0
1·452	1·442	1·434	1·427	1·419	73·0	1·509	1·498	1·489	1·481	1·472	89·3
1·453	1·443	1·435	1·428	1·420	73·3	1·510	1·499	1·490	1·482	1·473	89·6
1·454	1·444	1·436	1·429	1·421	73·5	1·511	1·500	1·491	1·4825	1·474	89·9
1·455	1·445	1·437	1·430	1·422	73·7	1·512	1·501	1·492	1·483	1·475	90·2
1·456	1·446	1·438	1·431	1·423	74·0	1·513	1·502	1·493	1·484	1·476	90·5

Digitized by Google

Densities.						Densities.					
At 4°.	10°/4°.	15°/4°.	20°/4°.	25°/4.°	Per cent.	At 4°.	10°/4°.	15°/4°.	20°/4°.	25°/4°.	Per cent.
1·514	1·503	1·494	1·485	1·477	90·8	1·525	1·514	1·505	1·497	1·489	96·5
1·515	1·504	1·495	1·486	1·4775	91·1	1·527	1·516	1·507	1·498	1·490	97·0
1·516	1·505	1·496	1·487	1·478	91·4	1·528	1·517	1·508	1·499	1·491	97·2
1·517	1·506	1·497	1·488	1·479	91·7	1·529	1·518	1·509	1·500	1·492	97·5
1·518	1·507	1·498	1·489	1·480	92·0	1·530	1·519	1·510	1·501	1·4925	97·8
1·519	1·508	1·499	1·490	1·481	92·3	1·531	1·520	1·511	1·502	1·493	98·0
1·5195	1·5085	1·4995	1·4905	1·482	92·6	1·532	1·521	1·512	1·503	1·494	98·3
1·520	1·509	1·500	1·491	1·483	93·0	1·533	1·522	1·513	1·504	1·495	98·6
1·520	1·509	1·500	1·492	1·484	93·5	1·535	1·524	1·516	1·506	1·496	98·9
1·520	1·509	1·500	1·492	1·485	94·0	1·537	1·526	1·517	1·507	1·497	99·2
1·521	1·510	1·501	1·493	1·485	94·5	1·538	1·527	1·518	1·508	1·498	99·5
1·522	1·511	1·502	1·494	1·486	95·0	1·540	1·529	1·520	1·509	1·4985	99·8
1·523	1·512	1·503	1·495	1·487	95·5	1·542	1·530	1·521	1·510	1·499	100·0
1·524	1·513	1·504	1·496	1·488	96·0						

We append below a selected comparison of our figures with those of Lunge and Rey.

Density, 15°/4°.	Percentages.	
	L. and R.	V. and M.
1·390	63·23	63·1
1·400	65·30	65·1
1·410	67·50	67·4
1·420	69·80	69·6
1·430	72·17	72·0
1·440	74·68	74·5
1·450	77·25	77·0
1·460	79·98	80·3
1·470	82·90	83·3
1·480	86·05	86·3
1·490	89·60	89·6
1·500	94·09	94·0
1·510	98·10	97·8
1·520	99·67	99·8

It will be observed that the differences in the percentage values do not amount in most cases to more than 1 part in 300 parts, which could readily be accounted for by differences in instruments and methods, all acting in the same direction. The greatest differences, approximately 1 part in 220 parts, occur within the limits 77 per cent. and 86 per cent.; it would appear on plotting out Lunge and Rey's result by our method, that there is a variation at 83 per cent., whereas we found in our study of the physical properties such a variation to occur at 77·9 per cent., which corresponds to the composition of the hydrate HNO_3, H_2O, or H_3NO_4, the analogue of ortho-phosphoric acid H_3PO_4; our conclusions are in conformity with those of W. H. Perkin, sen. (*Chem. Soc. Trans.*, 1889, 724, and *Trans.*, 1893, 65), Pickering (*Chem. Soc. Trans.*, 1893, 436), and Hartley (*Chem. Soc. Trans.*, 1893, 663). However, the general accordance of the two sets of results obtained at different times, with different instruments, and with slightly different methods by two independent sets of observers, can be regarded as satisfactory.

Digitized by Google

Current Topics

The Process Worker's Hands. —Writing of the lanoline ointment given in *The Photogram* of June the editor of *The Process Review* reports: —"Some of the boys who have tried this say it is fine."

The Johnson Half-tone Screens.—Messrs. J. E. Johnson & Co., of Leicester, have recently reconstructed their plant. A partnership change has also been made in the business, which is still carried on at 5½ Guthlaxton Street, Leicester.

Geo. H. Benedict & Co., the well known photo-engraving firm, have amalgamated with The Globe Electrotype Co., and the combined business will be known as The Globe Engraving and Electrotype Co. Though his name disappears from the title of the business, Mr. Benedict will still be identified with its management.

"The Electrical Trades Directory and Handbook," of interest to process-men from its inclusion of tables and statistics, is now in preparation for 1904. Alterations or matter for insertion should reach *The Electrician* office, Salisbury Court, Fleet Street, not later than January 7th.

A Photo-engraving Department has been installed at the Illinois College of Photography, and is promising well, says one of our exchanges. Mr. Lewis Flader, President of the International Union of Photo-Engravers, visited the college recently and looked over the equipment of the engraving department, with which he expressed his satisfaction.

"Glossoid" Copper.—Messrs. A. W. Penrose & Co. write:—We shall be glad if you will kindly include in the columns of *The Process Photogram* that we are the sole agents for "Glossoid" and "Etchoid" brand of copper, made by the Engravers' Supply Co. of New York. We shall be pleased to forward samples and quote prices to anyone interested in the matter.

Half-tones printed on a patterned paper are a specialty of the Perry Pictures Co., Boston, Mass. One of the pictures figures as a frontispiece in the November number of *The Printing Art*, and shows the richness and depth of color which is obtained in this way. A pebbling of the sheet softens some of the lines, and intensifies the high-lights, as well as adding to the carrying qualities of the prints when framed or used otherwise for wall display.

The Report of the L.C.C. School of Photo-engraving has been published, and the Principal, Mr. A. J. Newton, records the number of students during the session 1902-3 as 378, as compared with 245 in the previous session.

We are glad to see that senior students are encouraged to improve existing methods, and that two new processes have been worked out in the School. The graphic contents of the report is its strongest feature, as it demonstrates the excellent work carried out by students in the many departments of the School.

Hard things about process come easily from the pens of writers and reviewers in *The Daily Chronicle*, but sometimes the critic makes it difficult for the poor photo-engraver to repress a justifiable smile. Describing the collotype reproductions in a recent work on Holbein, issued by Messrs. Bell & Sons, the *D. C.* says: "The reproductions, unfortunately, are disappointing and inadequate. We have seen other reproductions that give a much better idea of the originals. Many of the blocks look worn out, and yet the edition cannot be so large as to have exhausted them already. The fault may lie with poor photography. We know the difficulties of photographing delicate drawings in which the color is faded and the paper old and stained by time. But for such a sumptuous volume these difficulties should have been surmounted."

However, with characteristic courtesy, the editor permits Messrs. Bell to point out that "the drawings have all been newly reproduced by the collotype process. This is the most accurate method of representing in facsimile, not only the artist's original work, but also the accidental deterioration and defacements which it has suffered in the lapse of time."

Bogus Copper Blocks.—According to *Process Work* it is reported that one company in New York, which operates under two names and has two prices for its work, depending on the heading under which the products are billed, is selling zinc half-tone plates which have been given a very thin deposit of copper to disguise the zinc. It is furthermore said that this copper deposit is simply a chemical wash applied in a few moments and as quickly dissipated when the plate is on the press. The following is given by *Process Work* as the formula for arriving at this desirable (?) end:—

Formula.—Dissolve 10 oz. of copper chloride in 6 oz. of water, and then add 15 oz. concentrated liquor ammonia and finally 300 oz. of water. The color of this solution will be a bright blue. Now add slowly a concentrated solution of cyanide of potassium until the color has almost disappeared. Pour this prepared bath in a shallow dish. Clean the zinc plate thoroughly with benzine and then with chalk and ammonia, and immerse it in the bath for a few moments, or until it is covered with a bright deposit of metallic copper. Wash plate under the tap and dry off with hot sawdust.

Digitized by Google

The Joly Process is apparently being carried on by John H. Powrie of 139 East Fifty-Sixth Street, Chicago. *The Chicago Tribune* tells us that Mr. Powrie took up the work of the Color Photo Co. in 1901, when that company discontinued the exploitation of the MacDonough-Joly method. The advance made by Mr. Powrie appears to be a commercial method of ruling the tri-color taking and viewing screens. New machinery is stated to be in course of construction, by which 200 dozen of the screens can be made per day. The editor of *Process Review* says he has seen samples of Mr. Powrie's work made for the Geological Survey, State of Wisconsin. These were reproductions of granite in five or six impressions, and they were exceptionally good. Mr. Powrie states that he made a "multiplicity of color records by photographic means (filters and color-sensitised plates), and printing direct upon zincograph plates, subsequently etched and printed in colors complementary to those employed in making the negatives. In this way, by employing five or six impressions which will suitably differentiate the colors of the original, an increase in depth or strength of character is obtained in the resulting print that cannot be secured with three impressions, and if the register is good, the selection of the inks and filters approximately correct, the results are surprising."

The Bracing Climate of the United States may be charitably held responsible for some original views of photo-engraving which Mr. S. H. Horgan of *The Inland Printer* has discovered in a Government report on selected industries. The official account of the process is:—"After the negative is developed, the film is stripped from the plate, reversed and placed on another, called a turning glass, *thus becoming a positive*. This is placed in contact with a copper plate coated with a sensitised solution, and exposed to light for about two minutes. After being developed, *this plate is enamelled* and 'burned in' over a flame. It is then etched with perchloride of iron. In this process, *the portions of the copper plate which have been exposed to the light in the printing process*—in other words, the lines that were formed by the screen in the original negative—*are etched away*, producing a printing surface composed of dots, which vary in size according to the lights and shadows of the object. In the *zinc-etching* process, instead of perchloride of iron, *muriatic acid is used*." Mr. Horgan adds:—"The italics in this verbatim extract from the official record are mine. The fact that turning a negative does not make a positive of it, and also that the portions of the copper plate which have been exposed to light in the printing process are just the ones that are not etched away, is known to the youngest apprentice in the business, as well as the fact that muriatic acid is not used for etching zinc. All of which could have been learned from the engravers who made the half-tones for the volume. It seems to be the fate of our Government, in all its departments, to be imposed on when they touch process-work of any kind."

Post Cards and Process.—A recent visit to the post-card department of Messrs. Raphael Tuck afforded us an opportunity, such as is not often presented, of noticing what an immense variety of effect is obtainable by ringing the changes on comparatively few reproduction processes. Variety and novelty are two qualities which the post-card publisher must bring into his business, and Messrs. Tuck, who have had them for years past in their Christmas card trade, continue them to an enhanced degree in the new but already immense branch of their business. With some 7000 designs to reproduce, their staff must be wide awake to the capacities of photo-mechanical and other processes, and that they do exercise a wise discrimination becomes obvious, not so much on examining one or two isolated specimens, but on inspecting collection after collection of samples with scarcely two subjects treated in the same manner. Collotype is largely used, and in regard to it, it is noteworthy that the fitting of the original to the process is recognised by Messrs. Tuck as one of the chief factors in their success. A telling example of the correctness of this view is the "Marie Antoinette" series of seventeenth-century beauties, hand-colored collotypes of exquisite quality from originals drawn specially for the process. Three color is largely and most effectively used, though some of the most striking and popular cards (of firelight effects, etc.) are from blocks printed on a tint. Lithography, in its many forms, and photogravure figure of course in the processes enlisted by Messrs. Tuck, though they are used to a less extent, we should judge, than collotype and typographic methods. The point, however, which we wish to make clear is the skill shown by the management in evolving, by a few methods, an almost endless number of effects. Evidently the direction of the branch is in hands as familiar with photography and process as with the technics of printing, and to a knowledge of these crafts is obviously joined the instinct which tells what the public wants.

How the Kurtz Litigation Stands.—The state of things in the United States regarding the action taken by the American Colortype Co. against Mr. Edward Stern of Philadelphia for alleged infringement of the Kurtz patents is indicated by the following letter from Mr. Stern to *The Inland Printer*:—"In December of last year an action was brought against us by the American Colortype Company for alleged infringement of the Kurtz patent. They filed their bill early in January, and we made answer in February. Since this, nothing has been done, and, inasmuch as the next step must be taken by their side, we do not know when, if ever, any further action will be taken. The proceeding is in the United States Circuit Court in Philadelphia, where all records

Digitized by Google

to date can be found. We beg to say that in so far as we are concerned, the suit is in dead earnest. We are satisfied we can show conclusively that if the Kurtz patent is valid, which we do not believe, we are not infringing it." It would appear, says *The Inland Printer*, from this that Mr. Stern means business, but the complainant in the case is the cause of delay. What Mr. Stern refers to in the line, "If the Kurtz patent is valid, which we do not believe, we are not infringing it," is this: The Kurtz patent is: "The herein described process of photo-mechanical printing, which consists in producing half-tone negatives by subjecting the sensitised plates to one exposure through screens which are provided with parallel lines *running in one direction only*." Kurtz insisted on making his three-color plates through single-line half-tone screens and patented that method, while all three-color workers since use the cross-line screens. As to Kurtz's claim as to the precise angle at which the various colored lines should cross each other to prevent a disagreeable pattern, defendant's answer in the present suit shows how the same idea was published and patented at least eight times before Kurtz patented it, thinking it something new.

The Arthur Cox Illustrating Co., of Birmingham, is the subject of an illustrated article in *The British Printer* for September–October.

"The business is of comparatively recent growth. In 1894 Mr. Arthur Cox commenced business for himself at Martineau Street as a wood-engraver, after duly serving an apprenticeship to the 'wood-cutting' art. A well known and successful long distance cyclist, he found the cycle houses alone kept him well employed, and thus he was successful from the very outset. Before six months had elapsed he was joined by his friend Mr. E. A. Biermann, a clever photographer, with an intimate knowledge of engraving and printing matters, being the son of one of the pioneers of lithography. Together they set to work to apply photography to use, first for wood, and then to work out methods of photo-engraving itself. To find sufficient room for their combined effort a move was made to premises at 17 Bennett's Hill, Birmingham. Whilst this was in progress the wood-engraving was the mainstay and made money, but in two years' time photo-engraving was added and a staff of twelve employed. The employees now total seventy. In 1897 they removed to Cornwall Street, to a position they considered big enough for any possible extension. They have, however, also in use two floors beyond and a basement, whilst at the present moment they are engaged in erecting entirely new premises at Ludgate Hill, hard by. The business was incorporated as a limited company in 1899.

"Apart from many little but important improvements in photo-engraving means and methods, Mr. Cox has entered the further field of printing with one or two inventions of value. The 'Perfect Register' quoins now handled and owned by Mr. Madeley Mole, for instance, are his invention. The new metallic overlay, which has just been put upon the market and previously mentioned in *B.P.* pages, seems to be quite the thing of the future for high class half-tone printing, absolute fit being guaranteed, and an increase in the life of the blocks if properly used."

American Shops through British Spectacles.—Mr. Stephen Tallon, an English process worker, who went to America on a tour of observation and in the hopes of interesting photo-engravers in collodion emulsion, has returned to England. Mr. Tallon (says *Process Review*), was *disgusted* with shop conditions in this country, and with the methods and apparatus used, as also the egotism of the workers. We always thought the American process-man led the world, but after talking with Mr. Tallon, we begin to think there is some truth in his criticisms, and that the European workers are better off, both as to apparatus and shop equipment, and well in advance as to methods.

In camera construction, for one thing, the European is decidedly ahead. There the ruled screen is used in the camera, held in place by a patent adjustment that facilitates the focussing of the screen dots before exposure, which is the only true way of determining the proper screen distance; while this adjustment apparatus, being in the camera and away from the wet plate in the holder, does not get out of order, and the plate holder, being light and cheap, can be replaced at a small cost when worn out.

Here, we carry the screen in the holder; soon spoil the best kind of an adjustment with the silver bath drippings, and have no means for focussing the dot. In most cases the operator simply guesses at the screen separation, occasionally figures it out according to bellows extension and diaphragm opening, but never focusses it because of his clumsy apparatus.

In Europe there has been great advance in three-color methods, while we here seem to be moving along in the same old way.

Collodion emulsion is being used there for direct three-color work with great advantage, while there are comparatively few in America who know anything about it. When half-tone direct negatives can be made through the red filter inside of five minutes, what is the use of doing three-color work by the indirect method, or bothering with the dry plate half-tone negative? We seem to be slow.

Mr. Tallon is an operator of experience, a quiet gentleman and a good thinker, and his observations are worthy our consideration.

Digitized by Google

The Penrose Pictorial Annual.—Before this issue of *The Process Photogram* has reached its readers, Messrs. Penrose's *Process Year Book* will have been published. At the time of writing, Mr. William Gamble, to whose business cares have been added a surveillance of authors and printers, block makers and binders, is breathing afresh, now that he sees the first copy or two of the Year Book in its completed state. In attempting to make the volume something better than its predecessors he has set himself a hard task, but the handsome book is ocular proof of his success. In bulk alone this latest of the Year Books exceeds its forerunners to a distinct degree, an increment which is about equally distributed between text, supplements, and advertisements. A detailed review must be postponed until we have been able to examine the volume at leisure. A hasty glance through an advance copy shows us that the pictorial and technical fare is as abundant and as valuable as ever. The authors include "all the authorities" on process and kindred matters. The editor's contributions are:—"An American Photo-engraving Pioneer," "Commercial and Press Photography," and "A Visit to the Manchester Municipal School of Photography." A. J. Newton writes on "Laces and Similar Materials in Fac-simile," and on "Screen Distance in Half-tone." Chapman Jones talks of "Plate Speeds," and there are numerous other technical contributions.

Of the illustrations it is impossible to speak too highly. The cover is a wonderful piece of modelled design by George Stuart Littlejohn. It includes a piece of André & Sleigh's tri-color work from a water color drawing by Miss Maud Littlejohn. The frontispiece is a photogravure by Büxenstein. There are some forty color supplements, and more than a hundred others representing every variety of monochrome work.

We shall review *The Process Year Book* at greater length next month for the sake of drawing attention to many things in it; but our first duty is to advise every process man and every person interested in the reproduction crafts to make themselves the possessor of it. The price of the Year Book is 3s. 6d., and the publishers Messrs. Penrose & Co., 109 Farringdon Road, London, E.C. Our own publishers, Dawbarn & Ward, Ltd., 6 Farringdon Avenue, E.C., are selling agents for Messrs. Penrose.

The Hewitt Lamp for Process.—According to a catalogue issued by the Cooper-Hewitt Electric Co., of 220 West Twenty-ninth Street, New York, "The mercury vapor lamp derives its light from the gas or vapor of mercury, in which the passage of an electric current causes a high state of incandescence.

"The lamp is constructed of a glass tube having a sealing-in wire at each end. These wires lead the current to the electrodes, one or both of which are of mercury. The tubes are exhausted to a high degree on a vacuum-pump and sealed off. This prevents any escape of the vapor which fills the tube.

"Mercury vapor under the conditions existing in the lamp possesses a high initial resistance to the passage of the electric current. This resistance, which seems to reside between the negative electrode and the vapor, must be first broken down before the lamp can be put in operation.

"Of the several ways in which this may be accomplished, two have been selected as being best adapted to commercial use. The first method consists in impressing upon the two electrodes of the lamp a high potential spark or 'kick' obtained from the discharge of an induction coil in series with the lamp.

"In the second method of starting no high potential is used, but the circuit between the two electrodes is first established by means of the fluid of the electrodes themselves. The lamps are so constructed that one electrode is normally on a higher level than the other. The lamp holder is hung on a pivot, and the operation of starting consists in first tipping the lamp so that there is an excess of mercury in the normal upper electrode and then allowing this mercury to flow, by gravity, in a stream down the length of the tube. This stream momentarily establishes a metallic connection between the electrodes and then breaks, usually at the bottom, where it ends in a spray. The lamp lights across the break, the luminous area rapidly extending up the tube as the stream falls away. The liquid mercury has the property of stringing out into a long, fine, continuous stream, and lamps over 4 ft. long can be lit in this manner, using no more mercury than is required for their normal operation.

"The average life of the lamp is about 1,600 hours, and they are constructed to operate singly on any commercial *direct current*, lighting circuits from 50 to 150 volts. For higher voltages nearly all the standard lamps can be run in series. With one exception, all lamps are intended to be run at from 3 to 3·5 ampères.

"There is almost no heat from the lamp. The temperature of the glass is slightly higher than that of an incandescent lamp bulb. The radiant heat, however, is not so great, and consequently a vapor lamp heats up a room less than a cluster of incandescent lamps.

"The light produced by the vapor lamp, though apparently a brilliant white, is almost entirely lacking in red rays. This absence of red produces a considerable distortion in color values, and consequently makes the light unsuitable for purposes where an accurate determination of color values is essential, but for ordinary photographic purposes of all sorts it has proved a wonder. The illumination being so diffused, and

Digitized by Google

the light composed to a great extent of the so-called 'actinic' or chemically active rays, furnishes for the work a perfect substitute for daylight.

"For process work it is far ahead of any arc lamp ever constructed, and once an operator has used the vapor lamp he appreciates its value. The great diffusion of light gives perfect evenness of illumination over the copy, and for matt surface prints, like aristo platino, this diffusion entirely eliminates the appearance of grain, which is so troublesome where arc lamps are used. I heard one operator say that he would not know how to make half-tones from 'grainy' copy without the vapor lamps.

"Personally, I have been using these lamps for over two years with the greatest satisfaction. In fact, it would not be possible to do the particular work for which they were installed, *at all times*, without great expense of time and power. Previous to their adoption it required for the same purpose four 25-ampère focussing arc lamps (100 ampères), giving a yellow light and requiring a prolonged exposure. Three U type vapor lamps consuming altogether about 10 ampères do the work now with much less time for exposure.

"There can be no question but that this style of lamp is destined to become very popular with the process workers. It certainly is efficient and economical, and these two points are powerful arguments in favor of its early adoption. All who have seen and tried the lamp are convinced, and it certainly behoves those who have not seen it to investigate."

The British exploiters of the lamp are the Westinghouse Co., 2 Norfolk Street, Strand, W.C., from whom, doubtless, copies of this booklet will shortly be obtainable. Meanwhile the company are prepared to supply technical information as to the working and properties of the lamps.

STRIPPING NEGATIVES, ETC.

DEAR SIRS AND MADAM,—In case any of your readers should not succeed with the stripping method described in your October issue (1903), I tender the following from the *Photographic Obozrenia* for 1898:—Water, 150 c.c.; carbonate of potash, 100 gm.; hydrate of potassium, 15 gm. It was used by Mr. A. Popovitsky with considerable success for his method of reinforcing extremely faint traces of writing or the like, by superposing negative and positive films and reproducing the multiples until sufficient density was obtained. Details and specimens were published in Vol. XII., March, 1900, of the *Memoirs of the Imperial Academy of Science of St. Petersburg*. Mr. Popovitsky noticed that films contract slightly; but this contraction is constant with one batch of plates.

For use, enough of the solution is poured on to the unvarnished negative to cover it, assisting it, if necessary, with a glass rod. After acting for about twenty minutes the mixture is squeegeed off into the stock bottle, which should be furnished with a wide funnel for the purpose. The film is now rubbed with a soft rag until it appears perfectly dry. The more thoroughly this is done the better, as if much of the solution is left in the film, it is ultimately liable to act on the printing surface. As Mr. Yeck stated, there is no fear of spoiling the film, unless grit or the like gets on it while rubbing.

Cut the polished film round, and strip.

Preserve between the leaves of a book.

I have not found the films stout enough for copying with technographical processes, where the film is pressed between two non-elastic surfaces as in collotype work. For such work I can recommend the method published in *Eder's Jahrbuch* for 1897, page 11, as I have stripped negatives made on plates of all the best manufacturers with no more than two per cent. failures; Edwards' Iso or ordinary strip without a single mishap.

Cameron-Swan's specifications of his graining process reminds me of a method employed here years ago by Mr. Scamoni of laying a granular deposit of asphalt on the negative for half-tone helio-engraving, also the use of a thin film, printed with fine lines and bronzed, which was interposed between the negative and sensitised paper for photolitho work; this film was turned twice or more times according to the effect desired.

A one-man exhibition of water-color drawings by Abb. Benois has just been opened here, and the illustrated catalogue contains two drawings reproduced in three-color half-tone engravings, with three or four collotypes. This, we believe, is the first exhibition catalogue published here with *colored* illustrations. Although it is rather dear, 2s., it does great credit to the producers, Messrs. Golicke & Willborg.—Faithfully yours,

C. P. CHESTERMAN.

St. Petersburg, Nov. 18th, 1903.

Digitized by Google

No. 122.—February, 1904.

THE PROCESS PHOTOGRAM AND ILLUSTRATOR.

TRI-COLOR CHAOS.

A GLANCE through the current volume of Messrs. Penrose's *Process Year Book* (reviewed on another page) shows the extraordinary variety of result obtained by commercial workers of the tri-color process. The differences are no doubt partly a question of price as well as of working methods, but these latter, among both good and bad, differ very considerably. The best exponents of tri-color get their results by processes which are alike in no two cases.

The contributions to the *Year Book* contain little about the principles of tri-color, save that of Dr. Drysdale on "Optical Considerations in Three-color Work," and here we find the author saying:—". . . The first essential principle to be fulfilled for correct color reproduction is that *each photographic plate must be affected over any part of the spectrum in a precisely similar manner to the corresponding color sensation of the eye.* In other words, each photographic plate is to be made to take the place of one of the sensations of the eye, and it must be made by orthochromatising or by color filters or both, to be affected in precisely the same way as a normal person's eye would be affected if two of the color sensations were blotted out so that he was color blind to all but the one sensation considered."

Messrs. A. J. Bull and A. C. Jolley, on the other hand, in the paper we print in this issue, conclude, from a long series of experiments, that "color mixture and sensation curve filters will only work, as they are intended to do, when all parts of the subject to be copied have the same brightness." Messrs. Bull and Jolley seem to have investigated the question of filter overlap very carefully, and their view is that the theory of color vision has very little to do with the working methods of color photography. In other words, they say that small differences in the division of the spectrum in making the three filters do not matter, but you should have an overlap of one over the other corresponding very nearly with the two printing colors. For example, the complete overlap of the green and violet is not to be greater than the greenish blue printing color, and similarly the overlap of the red and the green must not be greater than will give the yellow printing color.

Digitized by Google

On these points Messrs. Bull and Jolley quote the classical authorities on tri-color reproduction to show the confusion of opinion which exists. True, the standpoints of the authorities are not all the same. The practical man recommends what he has found feasible in his own work: the "scientific" experimenter is apt to disregard the limits which are set to the poor photographer by plates and printing inks. And so it comes about that the practice of the trade is tentative, a method of trial and error, and it is no small tribute to the technical and artistic craftsmanship of tri-color operators and etchers that the output is of the high quality it is, seeing that our knowledge of the principles on which the process depends is in such a state of chaos.

As one step towards remedying this condition of things, the paper by Messrs. Bull and Jolley is to be welcomed. It inquires how the filters should be related to one another in the matter of overlap, and considers the effect of overlap in regard to varying exposure, or, what amounts to the same thing, in regard to great color contrasts of a certain kind in the original.

The suggestions are borne out by the practical results of the authors, and it will be interesting to hear the views of theorists and practicians on the suggested limits of overlap.

DEMONSTRATING THE HALF-TONE DOT.

(Translated from *Zeitschrift für Reproduktionstechnik.*)

The formation of the dot in the screen negative is best understood by regarding each opening in the screen as the aperture of a pinhole camera, by which an image of the opening in the lens is cast on the sensitive plate. A very instructive experiment can be performed which imitates the whole phenomenon on an exaggerated scale. The glasses of a lens are removed and a circular stop inserted: the camera is placed in an apartment with one window, and the focussing screen placed from 8 to 10 inches behind the stop. On directing the camera towards the window, a patch of light, round, and fading off from its centre, is seen on the focussing screen. The further the focussing screen is from this opening in the lens and the smaller the opening is, the more plainly can one discern in the patch of light a quadrilateral patch which corresponds with the outline of the window. The window here represents the stop of the photographic lens which produces the dot formation. If the aperture in the lens is made square and the window circular, the result is different: with the focussing screen nearer to the former, we obtain a square patch of light which becomes gradually round as the distance is increased. We have thus two phenomena: with a short distance between the screen aperture and the ground glass, we get a more or less distinct image of the screen aperture, or at a greater distance an image of the window. By ringing the changes on these factors, the dot formation can be shown very prettily by using a square window and a square stop.

If the sides of the two squares are placed parallel to each other, the patch of light in each case is practically square. If, however, one of the squares is turned through an angle of 45° relative to the other, we obtain, on approaching the ground glass to the stop, first a figure of the stop and, further off, an image of the window. This arrangement permits the half-tone dot to be very neatly demonstrated. By drawing the ground glass into close proximity to the stop, the constitution of the patch of light on the ground glass is essentially as follows:—The area of the patch of light is

Digitized by Google

of uniform brightness close up to its edges, but there rapidly falls off in brilliancy. The patch consists of a large uniformly bright nucleus and a narrow margin. On choosing a greater distance between stop and ground glass, the nucleus is seen to shrink and the margin to widen. Finally a stage is reached when the margin has spread over the whole disc and the nucleus has contracted to scarcely more than a point in the middle. It can easily be seen that this condition, which is the most favorable one for proper half-tone reproduction, can exist with many various screen distances according to the size of the window used. By varying the conditions, it can be seen that the screen distance must be smaller, the greater the stop in the lens, and *vice versa.*

The following experiment can also be made. The screen being removed too far from the plate—that is to say, the ground glass in our experiment removed too far from the stop—we get, in place of the bright disc in the centre of the image, a somewhat darker spot with a bright margin. This state of things corresponds to the inversion in screen reproduction which frequently occurs in practice.

MODIFIED COLLOTYPE FOR BEGINNERS.

By Henry G. M. Barstow.

(*Continued from p.* 4.)

The Preparation of the Plates.

I will now suppose that my reader has chosen one or two negatives which he desires to reproduce.

The first thing is to prepare the printing surfaces. This is a simple matter, and can be done by the merest tyro. Take a box of ordinary whole plates—any gelatine plate will do—but the slower kind are the better. I myself use "half-tone" or "photo-mechanical," and have a preference for Mawson's, but I have no doubt others may be as good. I say whole-plates because I nearly always use them myself, although I occasionally employ half-plates and also other sizes; but if I have small negatives I habitually print three or four on the same plate and cut the prints apart afterwards—a proceeding which saves much labor.

Take, then, a box of whole-plates, open it and expose the plates to be prepared to the light for a moment or two; when working in the evening, expose them to the electric or other light, say for ten to twenty seconds. I have found by experience that it does not do to expose the plates for very long. I have never had good results from those exposed for more than two or three minutes, nor from those that were not exposed at all. I do not lay down any hard and fast rule; an exposure of from ten seconds to sixty or even a minute and a half will do nicely.

For the sensitising mixture take some bichromate of potassium, pound it up with a pestle and put 30 gm. into a dish with water to 1,000 c.c. or smaller quantities in the same proportions; when it is quite dissolved (which takes some time) filter the mixture (I use grey filter papers) into a flask, but just before doing so, add two or three drops of ammonia (·880).

Another plan is to use:—Ammonium bichromate, 10 gm.; potassium bichromate, 20 gm.; water, 1,000 c.c.

I have latterly adopted this second formula, as I have a fancy that it gives a somewhat richer image, and renders the printing surface harder, and consequently facilitates inking. Whichever formula you may yourself adopt,

Digitized by Google

the bichromates must not exceed the proportion of 30 gm. to 1,000 c.c. of water, or they will crystallise on the surface while drying.

Place your plate in a developing dish—I prefer a white one (xylonite) with a fixed plate lifter; pour out enough of the sensitising mixture to cover a plate well, and immerse the plate in it for three minutes. See that there are no air bubbles and that the plate, the dish, and the solution are all free from dust. I think it is best to keep the solution moving slightly, and it is quite easy to sensitise six plates at once if you happen to have as many dishes, but remember that you cannot use the dishes for anything else afterwards, as it is very difficult to get them quite clean again.

You may use the same solution for at least three plates; it is therefore quite as satisfactory to use two dishes (if you wish to sensitise six plates) by immersing three plates in succession in each dish of bichromate.

When a plate has been immersed for three minutes, raise it by means of the lifter and see that the bichromate flows evenly off the surface. If it does, lift the plate out and put it in an ordinary drying rack; if, on the other hand, the solution forms circles on the plate, drop it back again, rock it once or twice and try again: it is very important that the solution flows off evenly.

You can, if you like, immerse the plates in clean water for a minute before putting them into the sensitising solution, but I don't find any advantage in so doing. The whole of this process can be carried on in the light—not of necessity in the dark room, for it is only when the bichromated plates are dry that they are sensitive to light.

Having sensitised as many plates as you desire, and placed them to dry on a rack, put the rack into a corner of the dark room, so that the outside light will not flash upon them when you open the door. You must not shut them in a cupboard, for to dry properly the air must circulate round them. You can, if you care to do so, dry them in a box—lifted off the floor on feet, provided you drill holes in the bottom and cover the top with some material which will allow air to circulate through it. You will find that the most convenient thing to do is to sensitise at night, leaving the plates on a rack or a shelf in a corner away from the door; the next morning you will find them bone dry and ready for exposure. If whilst sensitising you use a tray with a plate lifter you need not put your fingers into the bichromate at all; and if there are any air bubbles detected while the plates are in the solution, break them carefully with a flat, soft camel-hair brush. Throw the used bichromate away: it stains everything it touches, including the finger nails, if you incautiously put your fingers into it. If it does get on to your fingers wash your hands at once, for when it is dry it is difficult to remove: and, moreover, if you have any cracks or sores on the hands, the bichromate may become a nasty irritant if it gets to them.

Exposure.

We now come to the exposure; this is by far the most difficult part of the whole process and the one requiring the most skill, especially as there can be no hard and fast rule as to the time it takes; but I can give you some guide and you will soon find out the rest for yourself. I now imagine you to enter the dark room—slip in quickly and shut the door; the plates in the rack are dry and very sensitive to light.

Place the negative in an ordinary photographic printing frame as for silver printing, and if two or three small negatives are desired to be printed on one plate, put a piece of clean glass in the frame (a whole-plate negative glass that has been carefully stripped and cleaned will do nicely for this purpose). Lay one of the bichromated plates film side against your negative, put a piece of black paper behind it—don't forget this—and shut the frame.

Digitized by Google

You can now carry it in to the light and expose as if you were making a P.O.P. print.

The time for exposure varies from five to fifteen minutes in fine weather; longer in winter. Place your frame in a quiet light—never in the sun. I always print indoors: if you print out of doors, do it in the shadow of a wall or building. Do not examine in a bright light. To examine the progress made, turn your back to the light, and get into the shade, open one half of the frame and turn back the black paper quickly. If you can see on the back of the bichromated plate a faint indication of the subject, your plate is about ready; if you have used the No. 2 formula, the bichromate of ammonium renders the plate itself darker than if bichromate of potassium alone has been used; consequently the image is less readily seen, the very faintest indication of the subject being probably sufficient. Supposing that you think that your exposure is carried far enough, take the frame to the sink, open it and immediately put the bichromated plate in your washer (a porcelain one is best). As you do this, you will see the image on the film side printed very faintly in its entirety to about the depth of hard lead pencil. The bichromate in running water washes off in about fifteen to twenty minutes. When this is accomplished, and the plate free from any tinge of yellow, take the plate out and put it into a rack to dry. Then, as the water leaves its surface, you will see the entire picture in a most beautiful low relief. When the plate has quite dried this will have disappeared, the plate presenting an opaque dull surface with perhaps a faint indication of the image in the extreme contrasts, such as the hair in a portrait.

(*To be continued.*)

THE PROCESS YEAR BOOK, 1903-4.

THERE is one page in each issue of Penrose's Pictorial Annual for which process men and publishers may render thanks to Editor William Gamble. Under "Acknowledgments" are specified the inks used throughout the text and supplemental pages. The illustrator can here compare ink with ink, not from hand proofs but from the machine impressions of a considerable edition. True, the working conditions are the best, for the printers, Messrs. Percy, Lund & Co., have done their part to perfection, but it is frequently useful to refer to such impartial specification as these printed pages afford: the best laid schemes of editors and publishers "gang aft agley" between the hand-pulled page and the machined volume.

The feature of this year's cover is the combination of a modelled design in grey and a piece of tri-color. The modelled design is a fine piece of work, strong, yet delicate, by G. Stuart Littlejohn, and is reproduced *via* the Swantype process of the Swan Electric Engraving Co. The tri-color is that of André & Sleigh, from a water-color drawing by Miss Maud Littlejohn. The subject—a connoisseur examining a lady's portrait—is one quite suited to the fusion of the two methods. Many design-schemes would prove entirely unfitted for reproduction in this way, though, no doubt, large use may be made of the combination of modelled work and half-tone in one, two, or three printings, for advertisement purposes, even if there is not the scope for it in legitimate illustration.

The frontispiece is a photogravure by Messrs. Büxenstein, whilst a fine example of photogravure with a 400-line screen is supplied by the Waller Engraving Co. of 141 East 25th Street, New York. The illustrations in the text and as plates are the chief claim for recognition, as the year's record of reproduction methods, which *The Process Year Book* can make. The con-

Digitized by Google

tributors to the literary or technical section include among themselves the chief authorities on the subjects, although a few well known and classic names are absent, and in some instances the authorities contradict each other. But the book exists by its illustrations, which are almost as diverse in the matter of technical method as in the matter of commercial origin.

Among the tri-color work the example by Dr. Grün attracts attention by the extreme pinkness of the lady's neck and shoulders as by the fact that the exposures direct through the red, green and blue screens were 30, 6 and ½ second respectively, using the Grün fluid lens at *f*/4. Elsewhere in the text the exposures, apparently for the same subject, are given as 15, 5 and ½, but in either case the result obtained is of the greatest interest. Dr. Grün's illustrations being in the nature of ocular proof of his arguments, he should not permit the hand-engraving of the portrait of Miss Alice Davis (page 16), excellently as the tooling has been done by W. F. Sedgwick, Ltd.

Other tri-color work is that of André & Sleigh, John Swain & Co., and the Carl Hentschel Colortype Co., Ltd. In each instance there are examples of fac-simile work and the commercial or advertisement result, and the skill of the reproducers is evident equally in both descriptions of output. Some other tri-color work cannot be accorded unqualified commendation, and the differences obtained by different firms, although governed to some extent by price, is yet an admission of the confusion which still prevails in regard to working methods of tri-color.

Among the non-commercial work we cannot refrain from eulogising the examples prepared by the students of the L.C.C. School of Photo-Engraving, Bolt Court. As a rendering of color and texture, there is nothing finer in the book than the reproduction of an oil-color sketch by T. J. Reindorp. Mention should also be made of the poster reproduced by Burman Norton, who specialises in this work, and of the reproduction of a block of granite made direct from the natural object, by W. E. Bond, F.R.P.S.

The highly worked-up half-tone, for catalogue illustration, is represented to a very considerable extent, but considering the commercial importance of the subject, not to an undue degree. The pair of blocks by Ashworth & Meredith are interesting as showing the enormous extent to which the print from the original negative is the merest sketch to be elaborated by the retoucher and fine etcher. The example given is surely a quite extraordinary one, for practically every bit of detail in the final version of the subject, a fashion plate of a lady's dress, is absent from the original. One asks:—Why photograph at all? The retoucher, Mr. F. W. Brookman (who is also the photographer!), might just as well have drawn the entire subject in wash. The importance of highly finished copy when dealing with subjects of this kind is emphasised also by a block from an example half worked up with the Aerograph, which illustrates some practical notes by Mr. Chas. L. Burdick on the use of the Aerograph for this work.

In thus reviewing the illustrations in Messrs. Penrose's Annual, we have perforce left many unmentioned on which some useful comments might be made. Space forbids a more extended reference, but we have done our duty if we have said enough to show that *The Process Year Book* is a volume which the illustrator, however he may contribute to the final printed impression, must make a point of purchasing, studying and preserving. Next month we shall come to a number of the articles.

And finally, let us say every good thing of the editor for the generous credit he gives to his collaborators—we speak of him now as editor, not as commercial manager. The fullest acknowledgment to author, illustrator, etcher and printer is more in his case than a custom or a propensity: it is an orgie.

Digitized by Google

THE STUDENTS' SUPPER AT BOLT COURT.

THE studio of the L.C.C. School of Photo-Engraving and Lithography presented an unwonted aspect on the evening of Dec. 19th, on which date the annual supper of students and staff took place. Mr. G. Frampton, R.A., presided over a company of nearly a hundred and eighty, and was supported in the vice-chairs by Messrs. A. J. Newton (Principal) and Cecil Rea (Art Master). The proceedings, which were delightfully informal, were in the nature of toasts, interspersed in a programme of vocal and instrumental recitals. Among those who thus contributed to the enjoyment of the evening were: — Messrs. W. G. Easton, Bennett, J. A. Sergeant, Walter Churcher, Hugh Stanton, M'Ilwraith, Woolhurst, Lamb, and Riley. Mr. Chas. Norman accompanied throughout, and a series of living pictures—"Souvenirs of the Old Masters" — were presented by Messrs. Armour and Jackson, assisted by Gardner, Rayment and Dyer.

From the programme of the Bolt Court Supper.
Designed by R. C. Armour, of the Art Classes.

The toast of "The Technical Education Board of the London County Council" was proposed by Mr. Frank Colebrooke, who felt that the Board were to be congratulated on being one of the educational bodies untroubled by the religious element in education. No one had ventured to hint that collodion emulsion was of the devil, and no one wanted to interpret moral or sectarian teaching in terms of inverse squares or enameline resists.

The enthusiasm of the company, however, reached its highest point when the toast of "Principal and Staff" was given. It is difficult to record in cold print the precise degree of warmth with which Messrs. A. J. Newton and Cecil Rea were received, for the vocal approbation of the students, synchronising with the thud of soda-water bottles on the table, refuses to be verbally described. But the fact itself, thus inadequately stated, is convincing testimony of the favor in which the Bolt Court scholars hold their teachers. Not one member of the teaching staff, it was interesting to learn, had been once absent from his place during the present session, and the students evidently respond to the whole-hearted services of the teachers.

Mr. Frampton, in replying to the toast of "The Chairman," proposed by Mr. Cecil Rea, gave some reminiscences—amusing and encouraging—from his

Digitized by Google

own career, and the proceedings came to a close shortly after eleven by the singing of "Auld Lang Syne."

An exhibition of students' work remained open for a few days after the supper. The collection numbered 368, every example being the work done in the single session—October 1902 to June 1903—a record which speaks well for the activity of the several departments. The reproduction classes were well represented by line, half-tone, collotype, photogravure, tri-color, and lithography, and the Art School produced some excellent work, especially in design. The management is courageous enough to show the studies made in the life class. The collection includes the work of the students in the life class, which sketches, it should be noted, are "time studies" made during the lesson in a period of about twenty minutes, but equal in merit to students' work of this kind from the larger art schools in London.

May we suggest that in future exhibitions of the kind at Bolt Court, students should be encouraged to fix a price to their work, for many visitors would be willing, we think, to purchase from the collection?

THE FUNCTIONS OF TRI-COLOR FILTERS.

By A. J. Bull and A. C. Jolley.

A paper read before the Optical Society on Dec. 17th, and here reprinted from *The Optician*, by whom the blocks illustrating the paper have been kindly lent.

ALTHOUGH a great deal of theoretical work has been advanced upon the subject of the filter curves of tri-color filters employed for taking the negatives of tri-color photograms, there seems to be still a considerable difference of opinion on the subject. Examination of the filters at present on the market seems to point to the fact that too little attention is given to the point of the overlapping in the construction of such filters. The object of this paper is therefore to consider the effects of the overlapping and to show how this will affect the final color reproduction.

We are not here dealing with the limits of photographic action, either at the red end of the spectrum (which is practically always limited by the sensitiveness of the plate) or at the violet end; neither are we dealing with the shape of the curves of photographic action, or the luminosity of the various spectrum colors. In passing, we should note that the curve of photographic action never corresponds with the visual effect, and the range of gradation which even the best dry plate will record is less than the eye can perceive.

One effect of this compression of the scale of gradation is to make the curve of photographic action steeper than the visual at the places where the filters absorb, and this, combined with the fact that the dyes generally used in making the filters have themselves abrupt absorptions, tends to prevent any gradual shading off at the limits of the filter records. This steepness is, moreover, enhanced in making the necessary chromated gelatine reliefs for transparency and paper work. We are not now attempting to put forward any final definition as to what tri-color filters should do, but merely suggesting a first step in their adjustment.

We consider that there is ample justification for our doing this, if only from the performance of filters now on the market. Some workers have thought that the curves of photographic action given by the tri-color filters should bear some direct relation to the curves of the color sensations. They would, therefore, have excessive overlap, and we think we shall be able to show that any such filters will give too great a degradation of the reproduction colors. The only writer, as far as we know, who lays any stress on the

Digitized by Google

amount of overlap is Professor Miethe, who regulates its amount by a somewhat rule-of-thumb method.*

In our tests upon the various filters we have examined we have preferred to use a fairly pure spectrum rather than trust to the perhaps doubtful effects of the impure colors of any color sensitometer. The use of the spectrum was further necessitated by our wishing to measure the region of the overlapping. We consider that if any process of color photography will give a fair reproduction of a spectrum, then it will reproduce any more complex colors well, since it reproduces their components, and we have taken this as the severest test we can apply. We believe this view is also held by Mr. F. E. Ives. Let us here carefully distinguish between the color *sensation* curves, generally called "Maxwell's curves," and color *mixture* curves. Maxwell's curves are not, as has sometimes been stated, curves obtained by matching each part of the spectrum by three pure monochromatic lights—these may be more properly called color mixture curves (and were drawn by Maxwell); but those usually known as "Maxwell's curves" give for every point of the spectrum the relative amounts of the three sensations which are stimulated in the eye, and which together make up the visual effect produced.

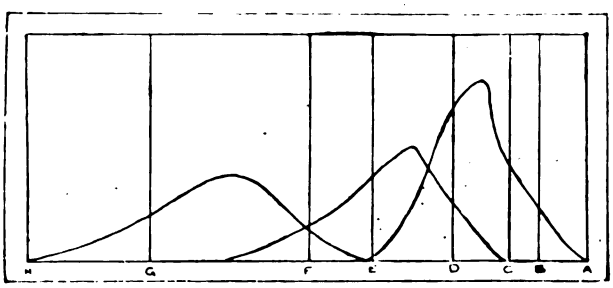


FIG. 1.—Color mixture curves (Maxwell).

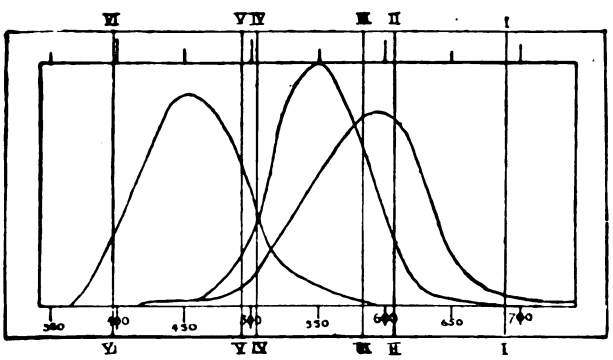


FIG. 2.—Color sensation curves (Abney).

Some experimenters have taken the color mixture curves, and others the color sensation curves, as the basis of their theoretical filters and inks. Whatever may eventually be found to be the best practical curves for the filters and their printing colors, we think we may state the two following fundamental points:—

First.—That since in any photographic process one prints from the parts of the negative where the light has not acted, or in proportion as the light has not acted, each printing color should consist of white light, less the colors recorded through the filter.

Second.—That the regions where the photographic records overlap should accord in hue with the printing colors of the red and blue negatives. It is with this latter point we chiefly wish to deal in this paper.

It would be well, in passing, to examine a few of the definitions and tests that have been proposed by the various experimentalists in this subject. Sir

* *The Process Photogram*, July, 1903.

Digitized by Google

W. Abney * states that the filters should follow the sensation curves and that the printing colors should be the exact complementaries of these, although in a paper before the Royal Photographic Society † he discusses the use of inks, and hence filters that have abrupt absorptions.

He proposes as a test for the filter ‡ a color sensitometer in which the colors have been measured in terms of three monochromatic primaries; these are graded in sets so that each set contains a relatively equal amount of its own primary. A screen and plate are said to be adjusted when a photogram of its graded sensitometer gives uniform densities.

Now, we consider any color sensitometer method such as this likely to give misleading results, because it would answer with filters passing only narrow bands, whereas, as Mr. Ives has pointed out, such filters would not render the colors whose regions of maximum luminosity happen to coincide with the colors not recorded. Moreover, the adjustment of filters by such a method would give no indication as to the form of their curves of action, and it would appear that the intention is for them to be adjusted to the sensation curves.

Mr. F. E. Ives, in the third Trail-Taylor Memorial lecture, states "that the distribution of photographic action should correspond to Maxwell's *color mixture* curves," and that the printing colors should be antichromatic to these.

Mr. E. Sanger Shepherd, in the Cantor Lectures of 1900, after discussing the use of Maxwell's color mixture curves, states that it is better for the filter records to follow Sir W. Abney's sensation curves, and proposes a sensitometer similar to that previously described as a test.

Mr. Howard Farmer states that it is best in practice to simply divide the spectrum into three bands having no overlap, the junctions being at about the D line and a little beyond the F line in the blue.

Dr. Miethe, of Charlottenburg, has proposed the use of filters similar to those of Mr. Farmer, having no overlap, and dividing the spectrum at about 6,000 and 5,000, but states that these would give worthless results unless used in such a manner that an artificial overlap is produced by giving a second and shorter exposure with the next filter on the same plate. For instance, for the red record he gives exposures through both red and green filters in the ratio of perhaps 15 to 1.

It will be seen from the above authorities that there is a great discordance of opinion as to what three-color filters should do, and it will therefore be interesting to consider in detail how each spectrum color may be reproduced by the tri-color process.

We may divide the spectrum, as far as its photographic reproduction is concerned, into five regions, that is, without taking into account any gradual shading off of the filter records at their limits. These regions are, firstly, those where only red, green, or violet are recorded through their respective filters, and which are reproduced by the superposition of the printing colors in pairs. And secondly, those which are recorded through the red and green, and through the green and violet filters, and which are reproduced by the printing colors of the violet and red records alone.

Let us suppose in fig. 3 that our red filter and plate records from the beginning of the visible red I. (λ 6,900) up to III. (λ 5,820) at the end of the yellow, and as from this negative we shall print upon the regions not recorded, let us print with a color which consists of the summation of all the colors from III. (λ 5,820) to the violet end of the spectrum (λ 3,970). The

---

* *Instruction in Photography*, 10th edit., pp. 480, 450.
† *The Photographic Journal*, March, 1899.
‡ *Ibid.*, January, 1900.

Digitized by Google

hue of the color obtained by combining all these wave lengths will be a greenish-blue.

Suppose, further, that our green record is from the beginning of the yellow II. (λ 6,070) to the end of the blue-green IV. (λ = 4,920), and that from this is printed on the parts not recorded, *i.e.* on the red region I. to II. and the violet region IV. to V., a color consisting of the sum of the colors from I. to II. and from V. to VI.; this will be a crimson.

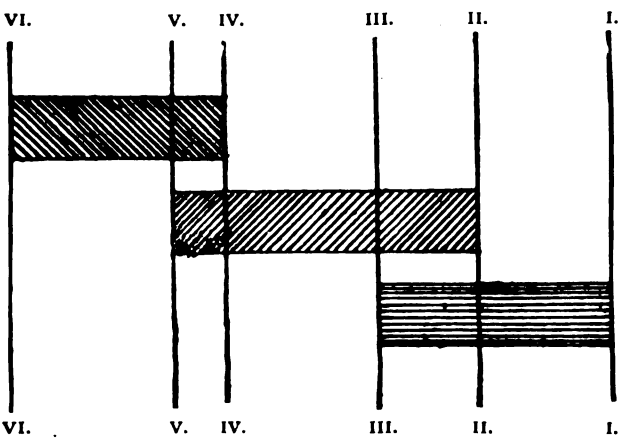


FIG. 3.—Diagrammatic representation of complete overlap.

Again, we will suppose the violet record extends from IV. (λ 5,020), the beginning of the blue-green, to the end of the violet VI. (λ 3,970); the printing color for this will consist of the remainder of the spectrum colors, viz., from the beginning of the red I. to IV.; this is a yellow.

Let us now superpose the three prints and consider the nature of the reproduction colors. From I. to II. we have superposed the crimson and yellow, and we have to note what part of the incident white light will be transmitted. The yellow pigment will absorb the violet to which the crimson is transparent, and the crimson will absorb the green and yellow to which the yellow pigment is transparent; the common transparency will, therefore, be the region I. to II. Therefore this region is reproduced by a uniform hue which is due to the sum of its own colors. This color is a slightly impure red.

By reference to the sensation curves, fig. 2, it will be seen that not only the red, but a little of the green sensation is stimulated by the shorter of the included wave lengths; but in spite of this it is a sufficiently good red for the purpose, because it is as pure as any red one is likely to have to reproduce.

The second region II. to III. will have printed on it only the yellow pigment which transmits all the colors up to IV. (λ = 5,020), and on referring to the sensation curves it will be observed that the spectrum yellow which stimulates only two sensations, the red and the green, is being reproduced by a color the components of which stimulate not merely the red and green, but also a little of the blue sensation, so that the spectrum yellow is reproduced with the addition, not of real white, but the sensation of white.

The yellow and greenish-blue pigments are superposed from III. to IV., and their common transparency corresponds to the same region, which is a green of slightly less purity than its central part. The greenish-blue, which reproduces the overlapping part IV. to V., stimulates the red sensation rather more than do the colors of the corresponding part of the pure spectrum. Finally, the region V. to VI., on which is superposed the crimson and greenish-blue pigments with a common transparency to the colors of the same region.

We might have, by integrating the areas of the curves cut off by the dividing lines in fig. 2, found the percentage composition of the reproduction

Digitized by Google

colors in terms of the sensations, had we thought it worth the while. It will be noticed that we have drawn no distinction between the blue and violet of the spectrum. Pure violet is a color which one has practically never to copy. It is thus seen that in reproducing a spectrum we do so with slightly degraded colors, and as Dr. Clay has pointed out, this effect is least noticeable when the degradation is with white. But we wish to point out that in the reproduction of natural colors the addition of white (or the sensation of white) does not take place. Take, for instance, the reproduction of a yellow pigment. All yellow pigments transmit or reflect the red, yellow, and green of the spectrum, and some even a little violet; that is to say, they are already equivalent to a spectrum yellow diluted with white, and are therefore as impure as the color with which they are imitated.

There are few greens to be met with whose spectra do not extend over a greater range than from λ 5,820 to λ 5,020, and so in their reproduction by the above system there is no addition to their impurity. One might cite many cases, but the whole point turns on the fact that although one may turn to the spectrum as a test, one does not in practice have to reproduce pure spectrum colors.

Considered from the point of view of the aforementioned treatment, the tricolor process by negative synthesis would appear to depend only indirectly upon the tri-color theory of vision, for the colors are approximately at least imitated independently of the mechanism of vision. It appears from the foregoing that the region which is recorded through both the green and the red filters is reproduced in the printing color of the violet record, viz., a yellow; and that the region recorded through both the green and violet filters is reproduced by the printing color of the red record, generally a blue.

Now, as one has, at present, to use reproduction colors which seldom give us what we require, we suggest that the amount which the red and green records fully overlap should be restricted to the region that corresponds most nearly in hue with the printing yellow to be used. Similarly, the completely overlapping region of the green and violet records should be confined to the part most nearly matching the blue or greenish-blue printing color. We consider the overlapping should never exceed this, and on the other hand should never fall far short of it.

The gradual overlaps required by filters, based upon color sensation curves, or intended to follow color mixture curves, are seldom or never realised in practice. They are things which are talked about but seldom produced. Mr. Ives is the only person, as far as we know, who claims to have successfully used filters whose records correspond to color mixture curves. We must give deference to Mr. Ives' statements, as he is a practical as well as theoretical worker. But some photochromscope filters of his which we have examined only give a very crude approximation to color mixture curves, and their excessive overlap is, we have found, fatal to their use for three-color printing.

There is also another point which seems to have been lost sight of altogether, and is, moreover, an objection which has not as much significance if the filters have fairly abrupt absorptions. In all molecular phenomena—*i.e.* in magnetism and electric response to stimulus of living or non-living bodies—in photographic action, etc., there is a period of ineffective stimulus; *e.g.*, in the case of a photographic plate there is a certain minimum amount of light action below which no deposit of silver occurs.

Suppose now that by a certain exposure to a spectrum with suitable filter and plate, one obtained a silver deposit whose density corresponded to, say, the red color mixture curve; if we gave any other exposure, then the shape of the curve ought to remain the same (except, perhaps, with great overexposure, when in any case all parts would tend to reach their maximum

Digitized by Google

limit of density). But this would not be so. On reducing the exposure, the less dense parts would lose their density too rapidly and soon become clear glass, while there was still a good deposit in the densest part. Fig. 4 shows what ought to occur on varying the exposure from the original, and fig. 5, what does actually occur.

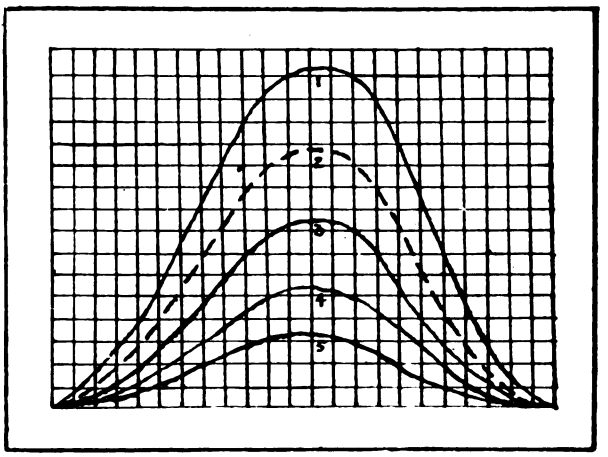


FIG. 4.—Showing how a "curve" ought to act with varying exposures.

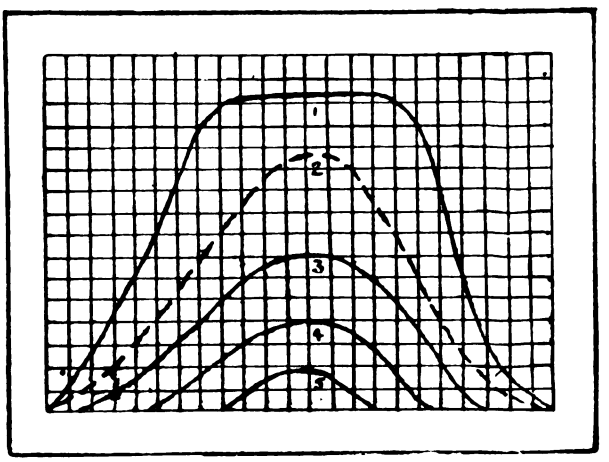


FIG. 5.—How a curve filter does actually act.

This shows that color mixture and sensation curve filters will only work, as they are intended to do, when all parts of the subject to be copied have the same brightness. It is probably due to the maxima only having acted in some parts of the picture that the previous example shown was not worse than it is. Of course, this argument applies to all filters only in greatly varying degree, but filters having marked maxima will act differently in copying light or dark colors.

In view of the rapid growth of the application of tri-color, especially to photo-mechanical processes, it is a matter of commercial importance, as well as of theoretical interest, to know what one wants, even very approximately, in the construction of the filters and the selection of inks. So confusing is the present state of affairs that tri-color operators in the process trade are guided by trial and error methods.

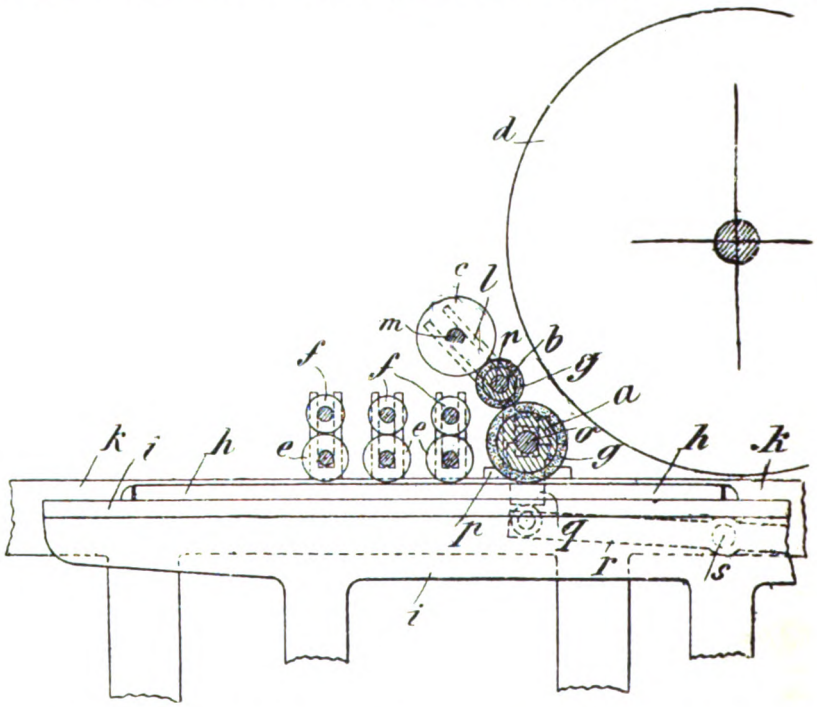
(The remainder of Messrs. Bull and Jolley's paper will appear next month.)

Digitized by Google

MOISTENING THE PLATE IN RAPID COLLOTYPE PRINTING.

THE December issue of *The Process Photogram* recorded a method of securing the proper moistening of the collotype plate by chemical means. Another patent (No. 8,692, 1903), of which the full specification has since been published, provides for the same operation in a mechanical manner. The method is thus described by the patentees, Herren Carl Wagner, of 75 Görlitzerstrasse, Berlin, and Ferdinand Stange, 9 and 10 Michaelkirchestrasse, Berlin:—

"Hitherto the moistening of collotype printing plates for quick collotype printing presses has been effected by hand with a sponge moistened with



glycerine and water. The disadvantage of this method, however, is that the moistening of the printing plate is very unevenly effected and must be repeated again at short intervals, the working of the printing press being necessarily stopped. By the method hitherto employed, therefore, not only is much time lost, but there is a further disadvantage, viz., that the number of impressions obtained by means of a single moistening operation constantly varies according to the temperature of the air present in the workroom and the amount of moisture contained therein, and that only a small number of serviceable impressions can be obtained by a single moistening operation. The reason for this is that the quantity of moisture on the printing plate is reduced at every impression, so that the earlier impressions are bright and the later impressions are dark. Accordingly a large number of impressions must be rejected. These disadvantages are obviated by the present invention through the employment of one or more cylinders for the

Digitized by Google

moistening of the plates, the surface of the cylinders being provided with a coating of pure soft gelatine or some similar glutinous material. The gelatine or other glutinous coating is suitably steeped in a water bath before the cylinders employed for moistening the plates are brought into use. The quantity of moisture contained in the gelatine or other glutinous coating of the moistening cylinders may be kept uniform by supplying fresh moisture in a suitable manner whilst the cylinders are in use. During the moistening operation the gelatine cylinders are in contact with the printing plate and are removed therefrom when the plate has been completely moistened, so that the plate can pass the inking cylinder in the usual manner. The advantage of the new method is that the printing plate can be moistened precisely according to requirement and an unlimited number of uniformly printed impressions be produced without stopping the printing press.

"In this way the capacity of quick collotype printing presses is considerably increased.

"The process just described is best carried out by means of gelatine cylinders and other cylinders covered with similar material, as illustrated in the drawing. Near the impression cylinder *d* are the damping cylinders *a b c*, of which the cylinder *c*, covered with flannel or felt, is sufficiently moistened before the printing is begun. Below the cylinder *c* and in contact therewith is a cylinder *b*, suitably coated with soft gelatine *g* or material of a similar nature. This cylinder *b* takes off moisture from the flannel coated cylinder *c* and conveys it to a lower cylinder *a*, which is coated in a similar manner with soft gelatine *g* or the like. The ends of the shaft *o* of the cylinder *a* rest in vertically movable bearings *q*, which are guided in the bearing casings *p*.

"By means of a lever *r* which pivots around *s* and acts on the bearing *q*, the cylinder *a*, which at other times is in contact with the printing plate *h*, is raised from the printing plate when the moistening has been effected. The ends of the shafts *n* and *m* of the cylinders *b* and *c* are seated in a fork *l*. Behind the cylinder *a* the ink-distributing cylinders *e e e* and the pressure cylinders *f f f* above them are mounted in the usual manner. *k* is the frame of the machine support and *i* the printing table reciprocated in the usual manner, on which the printing plate *h* rests.

"The damping cylinders thus arranged take up but very little space, so that the device is applied to existing quick heliographic printing presses, and printing in even larger sizes rendered possible without any alteration in the dimensions of the machine."

The claim is for a means of "moistening printing plates for quick collotype printing presses by means of one or more cylinders covered with gelatine or some similar glutinous material which apply the moisture uniformly to the surface of the plates substantially as described."

Wald Zachrisson, of Gothenburg, is one of the most enterprising printers and process workers in Scandinavia. From his press (writes *Process Work*) are issued some of the most charming and original designs in letterpress printing. Herr Zachrisson favors an antique style, and his work is a delight to lovers of really artistic printing. The decorative designs with which he embellishes his work are in excellent taste and remarkably effective. The choice of paper and ink is also entirely harmonious. The architectural features of the Zachrisson printing works reflect the original ideas of its proprietor, who is nothing if not progressive. Besides his extensive printing and bookbinding plant, he has a well-equipped photo-engraving department and electro and stereo foundry.

The Special Printing Issue of *The Scientific American* (New York: Munn & Co.; 10 cents) is a handsomely produced number containing much to interest illustrators.

Digitized by Google

Post Card Reproductions of well known pictures in British and Continental Galleries are being issued by the Photochrom Co., of 35 and 36 Hosier Lane, Snow Hill, London, E.C.

Orthochromatics and Tri-color.—The paper by Alfred J. Newton and A. J. Bull, reported in *The Process Photogram* of December last, has now appeared in full in *The Photographic Journal* dated October, 1903. The price of the *Journal* to non-members of the Royal Photographic Society is one shilling, and the publishers Harrison & Sons, 59 Pall Mall, S.W. The paper is illustrated by a number of plates, including a tri-color reproduction of the spectrum, which, although described by the authors as an approximation, is better in its rendering of color and gradation than any reproduction by the same means which we can call to mind.

The Half-tone Process by "Julius Verfasser" reaches us from Messrs. Iliffe as we go to press, and we must postpone a review worthy of it until next month. The volume has been enlarged and re-written throughout, so that it is practically a new addition to process literature. Written for the practical and commercial blockmaker, the aim of the author is still to make the volume of service to those taking up half-tone for the first time. The volume is issued in strong cloth binding at 5s. net.

Talking of process literature reminds us that a translation of Baron von Hübl's *Dreifarbenphotographie* is on the eve of publication. The English version has been prepared by Mr. H. O. Klein, and Messrs. Penrose will issue it under the title *Three-Color Photography* at 7s. 6d. net, including a separate color chart to serve as a test object in practical work.

A Souvenir from the students of the Lithography Photo-Process classes in the Liverpool Technical School reaches us from the instructor, Mr J. Goodman. As an example of work produced entirely by students of evening classes it is a most creditable piece of work and one which we trust will promote the prosperity of instruction in photo-mechanical processes in Liverpool. Particulars of the various plates are as follows:—1. "Panel Landscape," Prussia. Combination, Photo-zincography with chromo-aluminography. Negative by the teacher, Mr. J. Goodman; color design by H. L. Dixon; proving by O'Dowd. 2. "Circus Celebrities." Line engraving on zinc. Etched by E. H. Quinnell; wet plate negative by the teacher. 3. "Romany Queen." Half-tone etching on copper. Etched by E. Payne; screen negative by the teacher. 4. "The Rhine at Mayence." Collotype by Paul Jones, J. J. Ratchford, C. Webb, A. E. Paterson; dry-plate negative by the teacher. 5. "Emblematic Design of Photo-mechanical and Lithographic Processes": representing the Goddess of Art connecting the camera with artificial and natural light, and embodying the resultant picture with mechanical appliances for reproduction with the latest processes of the "Art Preservative of all Arts." Combination, photo-aluminography with chromo-lithography. Color design by S. Sillitoe and F. Clark; negative by the teacher; proving by C. Morton. 6. "La bon vieux Hospitalité." Original copperplate etching (dry point) by Alfred A. Peace; proofs by the teacher. 7. "The Maine from Saxenhausen." Photogravure by H. L. Dixon; dry-plate negative by the teacher. 8. "Cherubim of Lithography." Chromo-lithography. Designed and drawn by A. Pierson and J. A. Heaps; proving by C. Morton. Cover printed and bronzed by A. Evans, J. Adamson, and R. Mann.

Supplementary Printing from Half-tone Blocks.—The claim is made by William Noakes of 40 Albemarle Crescent, Scarborough, that by giving printed half-tones an additional working from a block or stone consisting only of the darker or shaded parts of the picture the effect of a full-tone photographic print is obtained. The several ways in which this process may be carried out are described in English Patent 1,007, 1903, as follows:—"This block or stone is charged with a thin transparent tinted varnish, such as known as printer's varnish, which when printed over the first picture gives the desired result.

"The coating of varnish, which is superimposed upon the first print, may be tinted as required by means of a slight admixture with the varnish of suitably colored printer's ink, or with a soluble transparent coloring matter.

"The same process is applicable in connection with photo-lithographic transfers prepared by a mechanical process, the lithographic stone taking a similar part to that described and relating to process blocks.

"In color printing the whole picture is first printed from a process block or from a photo-transfer upon a lithographic stone with all requisite detail and shading in dark or black ink, and separate blocks or stones are prepared, in solid or so-called flat tints, for each color it is intended to print upon the picture, in such manner that each color may register accurately, and occupy its proper position in the picture when completed.

"The colors I employ by preference are composed of printer's ink of different colors, or of other suitable transparent coloring matter, mixed with clear varnish, such as printer's varnish, and when this tinted varnish is printed over the first picture the details and shading of the picture show clearly through the transparent medium, whereby the 'shading off' of each color is rendered unnecessary, which tedious and costly process has hitherto been requisite in the ordinary method of color printing."

Digitized by Google

No. 123.—March, 1904.

THE PROCESS PHOTOGRAM AND ILLUSTRATOR.

MODIFIED COLLOTYPE FOR BEGINNERS.

By Henry G. M. Barstow.

(*Continued from p.* 21.)

Exposure.

I must now make some remarks about the quality of different negatives. Negatives that are very yellow take much longer to print than those that are grey. If you have a rather hard negative of strong contrasts, possibly under-exposed and possibly over-developed, you will find this the most difficult kind to get a good printing surface from. The best way of overcoming the difficulty is this: after you have exposed it as I have explained, remove the frame to the dark room, take the negative out, replace the bichromated plate with film inwards this time and cover the film which has the printed image in it with black paper; fasten up the frame, and carry it to the light again, expose the back or glass side of the bichromated plate for about three minutes in a quiet light. This will reduce the contrasts and cause the image to become fainter and softer. Take the plate out and wash in the usual manner.

On the other hand, should the negative to be printed from be too weak in contrasts—or be over-exposed and thin—then slightly under-expose the bichromated plate; this will in a measure rectify the original defect in the negative.

With a little judgment, a good printing surface can be obtained from any class of negative. I have personally never come across a hopeless negative, except, of course, such as are fogged: if, with care, a reasonable print can be obtained from it on photographic paper, then, also with care, a printing surface can be had from it on the bichromated plate.

There is also another way of preparing the printing surface, and that is by immersing the ordinary dry plate in the hypo bath until all the silver is eliminated and nothing but the thin, transparent gelatine coating remains. The plate is then sensitised with the bichromate solution and exposed in the same way as I have described above. There are advantages and dis-

Digitized by Google

advantages to this method of procedure. The chief disadvantage is that the exposure in this case cannot be controlled, but must practically be guessed at. A sheet of P.O.P. paper placed behind the sensitised film will perhaps act as a guide—*i.e.* when the image appears faintly visible upon it, the exposure is probably sufficient, but this is by no means an infallible guide: there is also less quality and richness in the prints obtained by this method, more resembling the ordinary collotype. On the other hand, this method has the advantage of making the printing surface more durable, and enabling the worker to obtain a larger number of copies from the same plate.

Varnishing the Edges.

When the plate is quite dry take a brush and some negative varnish and run the varnish round the edges of the plate to the depth of about a quarter of an inch, going well over the edges. Do not put too much varnish on: it should not be thickly spread. This varnishing of the edges is to protect them while inking. When the varnish is dry the plate is ready for printing. You can keep these plates indefinitely without deterioration.

Printing.

Immerse one of the prepared printing surfaces in a dish of clean water for about twenty minutes or longer, then lift it out on to blotting paper, and put another sheet of blotting paper over. Pass your hand over this in order to take off the superfluous moisture, taking care not to leave any spots on the surface. If the gelatine is sufficiently swelled you will now see the whole image in low relief; if the gelatine is not fully swelled put it back into the water for a few minutes and repeat. The gelatine now being nicely swelled and the water damped off (use a blotting paper that does not leave "fluff" on the surface), place the plate on a levelling stand or on any level surface and pour the "etch"—*i.e.* the damping solution—over it, making a little pool in the centre of the plate and spreading it with the finger all over, up to the varnished edges; do not go over these more than you can help. Do not put the plate into a dish for convenience and flood it with the "etch," or you will certainly fetch off the varnish from the edges and lay up trouble for yourself.

The "etch," of which you should make a fair quantity, say ½ litre, consists of one third pure glycerine and two thirds water, to which should be added two or three drops of ammonia ·880; it should be well shaken before use. This formula can be varied according to the necessities of the plate, but this is for a correctly exposed plate. Leave the "etch" upon the plate about thirty minutes, and watch that it does not "draw off" any portion of the surface. If the plate is not on a true surface it will naturally run towards one end or side, and hence the advantage of a levelling stand and a spirit level.

While the plate is under the "etch" the ink can be got ready.

This should be collotype ink (*encre grasse*). I do not wish to advertise any particular firm, but for the convenience of my readers I may say that I use Lorilleux's phototype or collotype ink. Lefranc's is also good, but I do not know if they have a London agent. The ink is done up in round tins and can be had in small quantities from 100 gr. to 1 lb. tins or larger, and in all colors. The inks I find most useful are the following from Lorilleux's catalogue:—1, mineral brown; 2, sepia; 3, teinte 21; 4, teinte 7; 5, teinte 48; 6, mineral red; 7, teinte 31; 8, teinte 26. The transparent colors are too sticky, and the pale colors, such as lemon yellow, etc., have not sufficient depth. All those inks just mentioned, and many more of Lorilleux's colors, are permanent; the firm publish a comprehensive catalogue which can be had at Maclean's Buildings, Fetter Lane. To break the ink up you will require a painter's knife and a palette knife, also one of the slabs previously

Digitized by Google

mentioned and a tin of varnish with which to thin the paint. Thin varnish is the best for the purpose, the medium kind being too sticky.

Take a pot of ink of the color you desire, and having opened it, take out with your palette knife a piece about as large as a filbert nut, dab it on the slab you intend to use for breaking it upon, put a little varnish to it, very little, from the point of your palette knife, and knead the ink up till it becomes a soft paste, then spread it out with your painter's knife several times until it works quite smoothly; then take it up on the end of your knife and spread it in a strip across your first inking slab.

You will now require the aid of your rollers. By working your heavier one up and down, spread the ink over the slab until it presents a perfectly smooth and even surface. Put your roller back in its place in such a way that it does not come in contact with anything. You will now require to run your second gelatine roller up and down on your slab till it is evenly coated with the ink, then run it a few times upon a second clean slab in order to remove the superfluous paint. You are now ready to ink your plate.

This, in the meanwhile, has been damped with the "etch." Tip the damping solution into a small dish, and place the plate upon a clean piece of blotting paper. With a small Turkey sponge remove the superfluous moisture, squeezing it into the dish, as it will do again for damping later on. When as much moisture has been removed as can be done by this means, take a piece of clean soft rag, free from fluff, and rapidly dab off all remaining visible traces of moisture. All this is very quickly done, and does not take longer than fifteen seconds or so. Now place the plate upon a piece of rubber cut to size, and upon a level and true surface, and proceed to ink (an old collotype plate, ground side uppermost and covered with a piece of clean white paper, also makes an excellent support for the plate when inking).

It will be found convenient to have two plates ready for working from at the same time, so as to avoid waiting during the time of damping with the "etch."

A plate, if it is reasonably good, will produce at least three even prints without re-damping—some very good plates run to as many as seven or eight. A poor plate may require damping after every second pull, or even after each pull; but if a plate requires damping each time and any considerable number of prints are required, I prefer to make a fresh plate, as under such circumstances printing becomes tedious. Sometimes a plate may be considerably improved, if it is over-exposed, by putting it for a time under a damping solution consisting of one third of the ordinary damping solution and two thirds water, to which has been added five or six drops of liquid ammonia ·880. It is easy to see if the plate has been over-exposed, as the lights do not clear and the image takes the ink all over, and gives a print wanting in contrasts and pluck. The bath of ammonia and water does much to rectify the error of exposure, but the worker must remember that having treated the plate with ammonia and having tipped it off, he must spread the ordinary damping solution over the plate for a few moments before resuming work on the plate, or he will find a kind of veining on the surface which is difficult to get rid of.

Now take your roller, well charged with ink, and pass it lightly over the surface. This should leave an even coat of color over the whole surface, except perhaps on the very highest lights. Run the roller once or twice over the second inking slab and go over the plate again, using sufficient pressure to squeeze the ink into the relief, and you will see the whole picture. The probability is that the image will be a little hard, and the half-tones will require treatment; they should be inked very gently, by taking the roller with only a little color, softly over the plate. Having inked the picture fully and obtained all the nice gradations, the plate is ready to print from.

Digitized by Google

A CORRESPONDENT writes:—Mr. Barstow's plan of exposing a gelatino-bromide dry plate to light and desensitising in a bichromate bath is well known, and many successful reversed negatives are produced by this means without the trouble or expense of making a positive transparency.

In showing the article to a known expert and successful teacher in one of our London technical schools who called upon me, his reply was—"What you and I desire to be informed is how to make the impressed bichromated film *stay on the glass*; you know it peels or breaks away after a few impressions have been pulled. This has been our experience;" otherwise the result is satisfactory.

To which Mr. Barstow replies:—Your correspondent must have been particularly unfortunate, as I have hardly ever been troubled by "peeling or breaking away." I should attribute his failure to one of the following causes:—

1. Insufficiently varnished edges.
2. The etch having been allowed to lie on the varnished edges, or to get under the varnish.
3. The defective or too thin coating of the plates; those used should be a fairly thickly and evenly coated *slow* photo-mechanical plate; not all plates are suitable for the purpose.
4. Incorrect exposure.
5. The use of too heavy a roller for inking; or the operator may have too heavy a hand with the roller. If the plate is correctly exposed, *absolutely no* pressure or force in the use of the roller is necessary.

I have had plates that furnished as many as a hundred impressions without any deterioration.

COMMERCIAL COLLOTYPE.

WE are glad to hear that there is a revival in collotype printing in this country. It is simply preposterous that such a large proportion of our collotype work should be executed in Germany. There is no question of "dumping" here, as the English market is regarded by the German collotype printers as the most profitable, as well as the largest, part of their business. The writer recently went over one of the largest collotype offices on the Continent, and it was painful, from a British point of view, to find that nearly all the machines were running on English jobs. Pictorial post cards were there to be seen representing nearly every nook and corner of our country.

The pity of it is that there is no necessity for this state of things, as isolated cases prove that collotype work can be done here just as well, and just as cheaply, as abroad. Fortunately there are unmistakable indications that in the future a much larger proportion of it *will* be done here. The fact is the collotype process is a delicate and difficult one, and it is not easy to find Englishmen who have "tackled" the difficulties thoroughly and seriously enough to get results equal to those of their German competitors. At length, however, the pictorial post card craze appears to have brought home to the phlegmatic Englishman the enormous possibilities of the collotype process, and we hear of several new plants being put down here, to be largely devoted to post card work, the demand for which would appear to be absolutely without limit. Our advice to those who contemplate such a step is to do the thing thoroughly. Do not starve the department in any respect. Put down the best and latest machinery, adopt the best photographic equipment and

Digitized by Google

materials—in short, place the department on equal terms with your German competitors—and it will be found that there is no better investment at the present time, in connection with the printing trade, than the collotype department.

The question of foreign-printed matter, we would add, is coming up in Parliament in connection with the sale of a certain magazine printed in Holland issued without intimation of the fact, as required by the Merchandise Marks Act.

KLIMSCH'S "JAHRBUCH," 1903.

THE *Jahrbuch* of the celebrated Frankfort house, represented in London by Hunters, Ltd., presents a review of graphic arts—letterpress as well as illustrative. The text, unfortunately, is in German, a fact which precludes us from giving such a detailed review as the same matter in English would command. But the contributions include a number on important topics. Among these are "The Theory and Practice of Half-tone," by Eugen Klimsch; "Double-tone Inks," by Dr. Rübencamp; "Loss of Detail in Half-tone Negatives," by Otto Mente; and "Collodion Emulsion," by F. Felsburg. The reader unfamiliar with the German language will still find Messrs. Klimsch's annual worth purchasing, studying and preserving for its supplemental illustrations. They mark the high-water mark of present-day graphic methods, and in their variety and excellence of technical production show the most scrupulous care throughout. Indeed, the whole get-up of the volume calls for the highest praise. Blockmakers, printers and binders have been commissioned with the single aim of an elegant piece of printing. That each has done his part in the best manner, the perfect production supplies ocular proof. Among the supplements of great technical interest are a four-color print printed without make-ready from Albert's "relief clichés," and a tri-color print by Lorilleux from negatives taken direct by Prieur & Dubois, Puteaux, near Paris. Jean Malvaux of Brussels contributes a charming tri-color of a group of roses printed on a patterned paper. We ought not to omit a prominent mention of the extent to which the work of Messrs. Klimsch's school and experimental institute at Frankfort figures in the volume. In that establishment, as readers of *The Process Photogram* know, methods are worked out, students instructed, and materials proved. If the excellent specimens of work there produced are anything to go by, the school is evidently able to train its students and to provide them with the best of everything for their work. We would advise our readers to add Klimsch's *Jahrbuch* to their library. In so doing, they put themselves in possession of a volume of specimens which they can properly consider as a standard of perfection to be aimed at in their own practice.

Reversing Negatives.—Replying to a querist in *The Inland Printer*, S. H. Horgan gives the following as the most generally used method of stripping and reversing negatives:—"The quickest way found in this country for reversing negatives is to flow with a rubber solution, dry by heat, flow with plain collodion, and set fire to the latter to burn off quickly the alcohol and ether. Cut around the film edges, lay in warm acetic acid for one or two minutes, when the film will become loosened and can be stripped off readily and turned over on another glass, squeegeed, blotted and dried. This is the method employed on all the daily papers where speed is the essential, and where these operations in reversing or 'turning' a negative are performed in from five to ten minutes."

Digitized by Google

THE FUNCTIONS OF TRI-COLOR FILTERS.

By A. J. Bull and A. C. Jolley.

(Concluded from last month.)

We have examined several sets of commercial and recommended filters, by reproducing a fairly pure spectrum with them. The regions of the spectrum recorded through them, and also the approximate distribution of the colors in the reproductions, are given in the two tables accompanying this paper.

The reproductions of the spectrum we are about to show were made with superposed gelatine reliefs, dyed with erythrosine, brilliant yellow, and fast green (blue shade). The peculiarities of the reproductions made by means of the various filters are as follows :—

Ives' Kromskop Filters.—These are used with the Lumière C. panchromatic plate. It must be noted that no red filter records the first half of the red between the beginning of the visible and about λ 6,500. This is, therefore, always reproduced as black. The very moderate sensibility of all photographic plates to light of this region allows of its use as a safe-light for their development in the dark room.

The gradual shading off of these filter records into each other produces a more pleasing effect in the reproduction than the abrupter absorptions of the other filters. It may be assumed from the writings of Mr. Ives that these filters are intended to give in the negative photographic records such that the variations in the density of the silver deposit approximate to the color mixture curves.

The result of this excessive overlap is that the part which is reproduced as yellow, instead of being confined to the yellow itself, spreads as far as λ 5,300 in the green, so that the greater part of the green is reproduced as yellow. The overlap in the blue is not excessive unless a greenish-blue pigment is used for the printing, when the deep blue of λ 5,000 to λ 4,750 is reproduced with a greener hue than the original.

Messrs. Farmer and Simmons' Filters for Process Work (see *The Photographic Journal*, June, 1901).—These are given in solution for use in ¼-in. cells. Two blue filters are given. BLUE FILTER No. 1.—Eosin (blue shade) solution used with a Mawson lantern plate. This records the violet and ultra-violet only. BLUE FILTER No. 2.—Eosin and potassium chromate solution. This cuts out the ultra-violet and part of the violet.

GREEN FILTER.—Potassium chromate and methylene blue. This is used with a Lumière A plate. The broad even band of color transmitted by this filter allows the band of comparative insensibility in the blue-green, possessed by this plate, to become rather marked. The result is that a little red prints on this part and causes a dulling of the color.

RED FILTER contains potassium bichromate, eosin, and ammonia, and it is used with a Lumière B plate.

With these filters the part that is reproduced yellow is in the yellow-green, there is the degradation of the blue-green noted above, and with the second blue filter the extreme end of the violet is reproduced as black, but as its luminosity is low it probably is not of much consequence.

Sanger Shepherd's Filters for the Spectrum Plate.—The photographic records with these filters end somewhat abruptly. The red is not recorded quite as far as with the other filters; this is due to the peculiarities of the plate used. The band reproduced as yellow is too broad, extending from the

Digitized by Google

TABLE I.—Showing the Regions of the Spectrum recorded through certain Tri-color Filters.

Filters.	Red Record.	Green Record.	Violet Record.
Ives (Kromskop).	6520–5250 (maximum effect 6480–5800).	6300–4700 (maximum effect 5700–5250).	5050–3800 (maximum effect 4950–4500).
Farmer and Simmons.	6500–5700.	5850–4550 (with a minimum 5300–4900).	No. 1, 4500 into ultra-violet; No. 2, 4850–4350.
Sanger Shepherd.	6340–5710.	5900–4950.	4820–3800.
Lumière.	6640–5860.	5420–4800.	4730 into ultra-violet.
Lumière N.A. Co.	6580–5760.	5800–4660 (maximum effect 5800–4900), also slight effect in ultra-violet 3890 and beyond.	4700 into ultra-violet.
Klein (for collodion emulsion).	6470–5470.	5900–4950.	Chief effect—5100–4500, tailing off to 3800. Slight effect—6000–5830.

TABLE II.—Showing Approximately the Regions of the Spectrum which are Reproduced in the Colors indicated.

Filters.	Unrecorded Red (reproduced as Black)..	Red.	Yellow.	Green.	Blue or Greenish-blue.	Blue-violet.	Black.	White.
Ives.	6900–6520	6520–5800	5800–5300	5300–5000	5000–4750	4750–3800		
Farmer & Simmons { No. 1.	6900–6500	6500–5850	5850–5700	5700–4500	4500–4550	4550 and beyond.		
Farmer & Simmons { No. 2.	6900–6500	6500–5850	5850–5700	5700–4850	4850–4550	4550–4350	4350–4000	
Sanger Shepherd.	6900–6340	6340–5900	5900–5710	5710–4950		4820–3800	4950–4820	
Lumière.	6900–6640	6640–5860		5420–4800		4730 and beyond.	{ 5860–5420 { 4800–4730	
Lumière N.A. Co.	6900–6580	6580–5800	5800–5760	5760–4700	3890–3550	4700–3890	4900–4730	
Klein.	6900–6470	6470–6000	5830–5470	5470–5100	5100–4950	4950–3800		6000–5830

NOTE.—For comparison with the figures in this table it may be interesting to note the positions of the various colors in the spectrum. From the beginning of the visible, about λ 6900–λ 6200, is a pure red. From this point an orange tint is gradually assumed until it becomes a distinct yellow at λ 5900–λ 5780. The green region lies between this and λ 4900, there being a gradual change from a yellow-green to a blue-green. From λ 4900–λ 4600 is a deep blue, and from λ 4600 to the limit of visibility, about λ 4000, a violet.

Digitized by Google

truer yellow into the green at λ 5710, while in the blue there is a narrow band of black.

Filters from Messrs. Lumière, of Lyons.—The red, green, and blue filters are used with the Lumière B A and extra rapid plates respectively. They give three isolated bands of red, green, and blue-violet only, of fairly correct hue for the positions they occupy, but the intermediate parts are reproduced as black, as they are not recorded at all. The ultra-violet is reproduced as blue-violet.

Filters from the Lumière N.A. Co.—Used with the same plates as the last. The reproduction with these is fairly good, except that all the colors are shifted a little towards blue end. The narrow band of yellow is in the yellow-green, and the green extends into the blue. The slight transparency of the green filter to ultra-violet causes a region there to be reproduced blue.

Klein's Filters for Collodion Emulsion.—These are used with Albert's collodion emulsion. For the red filter, the emulsion is sensitised with Penrose's "C" sensitiser, and for the green and blue filters with Albert's "A" sensitiser. The most peculiar point about these filters is that the blue one consists of a dye that absorbs green only, and as the sensibility of the "A" sensitised emulsion extends into the yellow, this color is slightly recorded through the blue filter, and being also recorded through the other two is reproduced as white. The part that is reproduced as yellow is the less refrangible half of the green. The remainder of the spectrum is more correct.

It occurred to the authors that it ought not to be difficult to make a set of filters that on a good panchromatic plate would give a reproduction as good or better than any of these. We therefore dyed up a set of dry filters with methylene blue, napthol green and scarlet, and these, when roughly adjusted, gave on a plate dyed with Miethe's ethyl red the following spectrum records:—

Red filter - - - -	6,500–5,850
Green filter - - - -	5,900–4,650
Blue filter - - - -	5,000–3,600

We found that these gave a fairly good but not by any means perfect reproduction of the spectrum, the overlapping portions being here restricted approximately to the hues of the yellow and blue printing colors, and there being no stray portions of light coming in where they are not wanted.

The last set of records that we have to show emphasise two points already mentioned. The filters are methylene blue, napthol green, and scarlet R.R., used on a Lumière C plate. The red filter was adjusted visually, and well illustrates the fallacy of such a method, for, as will be seen, its photographic record shows that it is transparent to light beyond the visible violet. The green filter has been under-exposed, and shows as a consequence the degradation of the green with red, due to a band of insensibility in the plate and a black band in the yellow.

The degradation of greens is a matter of great importance in tri-color work. It is of constant occurrence, and there are several causes tending in the same direction.

(1) Excessive overlap between the red and green filters, whereby an insufficient amount of blue occurs in the print.

(2) The comparative insensibility of most orthochromatic plates to blue-green, which results in an excess of red being printed on them. This is really a case of the filter record having maxima, a point we have discussed.

(3) The want of transparency to green of most of the blue printing colors, and their slight transparency to red.

Digitized by Google

To summarise our suggestions:—

(1) Printing colors should be transparent to the colors not recorded by their respective filters, and are not to be merely complementaries (except that the blue printing color must not transmit the extreme red, which is never recorded).

(2) Complete overlapping regions to accord in hue with yellow and blue printing colors.

(3) Records to be without maxima (or minima) over the regions where complete record is required.

This can only be obtained by filters with very abrupt absorptions, working

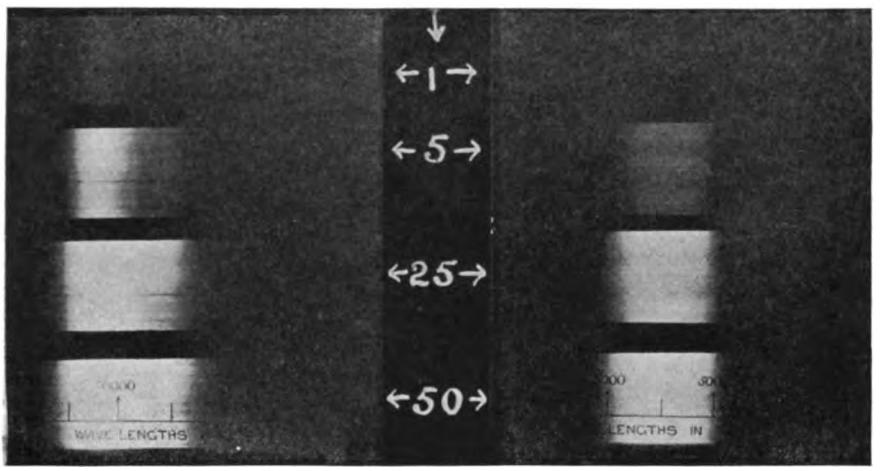


FIG. 6.—Varying exposures to the spectrum with a curve filter (Ives' red), showing the different effects obtained with under and full exposure.

FIG. 7.—Same exposures with a filter having abrupt absorptions, showing but slight variation with exposure.

upon plates with an even sensibility over the region being recorded. And in conclusion we venture to suggest that such filters and plates will give more faithful reproductions of complex colors than those attempting to follow curves.

In the discussion which followed the paper, Dr. Clay said that the pure spectrum was not only a very severe test of color filters, but perhaps not the best test by which to judge of their suitability for reproducing the colors of natural objects. The Sanger Shepherd filters, he said, gave remarkably good results in spite of the fact that the spectrum taken on the Sanger Shepherd filters thrown upon the screen by the authors did not look like the original.

Mr. William Gamble quite agreed with Dr. Clay with regard to the point that the spectrum was perhaps not the best test for filters, and this fact was brought home to him in regard to the results which were shown from the Klein filter. Mr. Klein, he said, had found himself unable to be present, but on talking over the paper with him (Mr. Gamble) he had pointed out that the blue sensation filter to which the authors referred was a filter which had been discarded for nearly eighteen months. It was originally prepared to suit a collodion emulsion plate, the maximum sensitiveness of which lay between E and G, having no sensitiveness in the yellow at all.

Since the introduction of the new sensitiser, which possesses a maximum in the yellow-green, a new filter had to be prepared to avoid any action

Digitized by Google

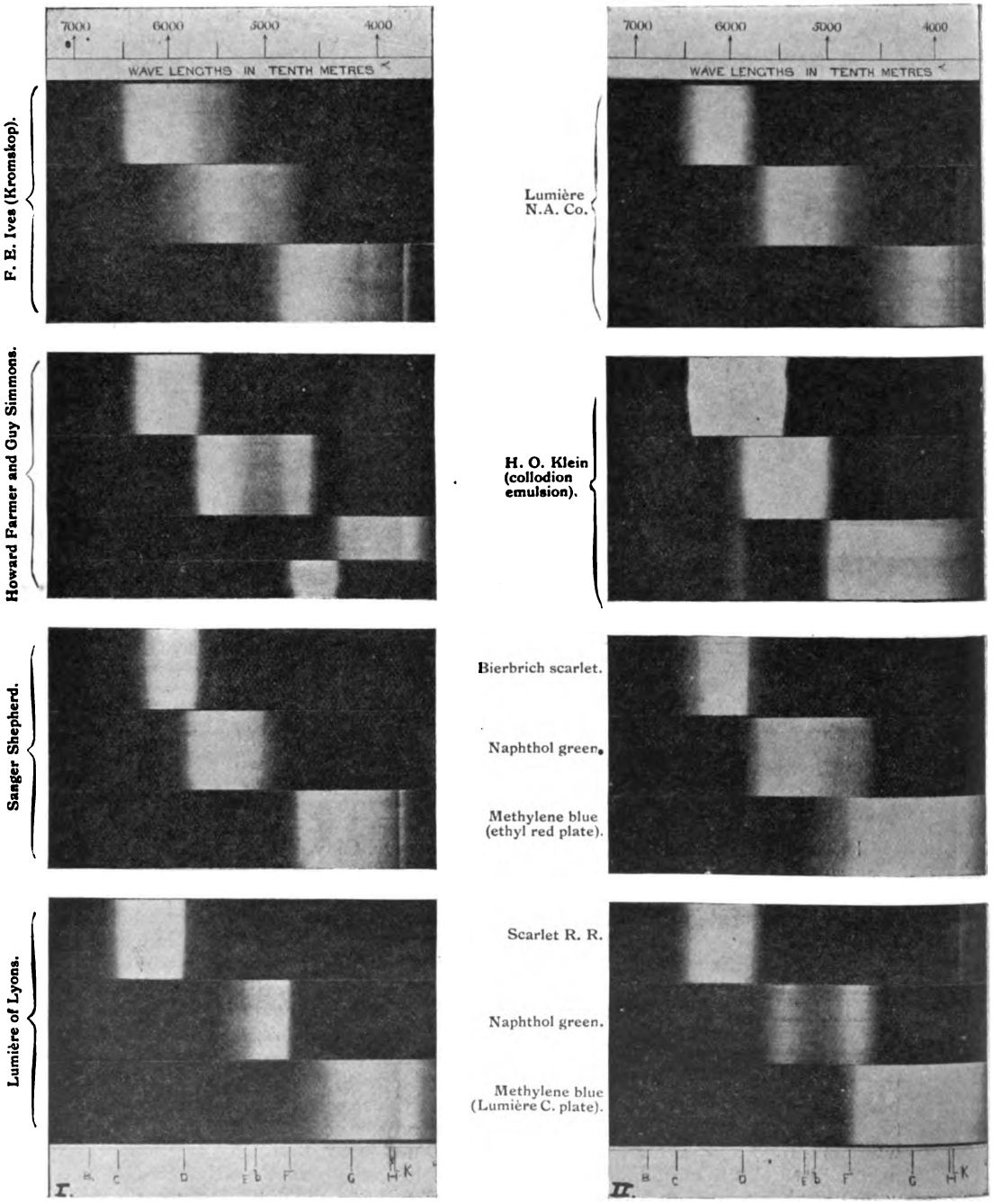


FIG. 8.

Digitized by Google

taking place in the yellow. This filter was not blue, as the authors had described it, but of a bluish-red, best specified by the shade of an aniline dye of the rhodamine group, and its absorption band affords full protection against the slightest action of the yellow, yellow-green, and blue-green.

In replying for himself and his colleague, Mr. A. J. Bull pointed out that in the case of filters with a large overlap, such as those of the Ives' Kromskop, it was possible by testing the exposure to reproduce the spectrum fairly well, but exactly how such filters worked depended on the exposure. Mr. Bull quoted the instance of using filters on an oil painting—a portrait, for example. The face would be light and the background dark. For the photographic plate to record the detail of the dark background, the face would have to be somewhat over-exposed; that meant that both limits of exposure were being employed on that picture. This being the case, the filters would be acting with tremendous overlapping, and that was the reason of the varieties obtained by different exposures, and why they did not think that much could be done with filters following sensation curves, or, rather, color mixture curves.

He considered that it was necessary that filters should act in the same manner in copying the dark portions of the picture as in copying the light. As all colors which have to be reproduced, both in nature and from pictures painted in pigments, gave broad bands in the spectrum, he thought that filters could be obtained which would correctly record the dark colors as well as the light, and that they would be better than the color mixtures, even though they reproduced the spectrum in "chunks."

THE PROCESS YEAR BOOK.

Second Notice.

THE problems of the tri-color process inspire a very large proportion of the contributions to the *Year Book*. Dr. Aarland pronounces in favor of tri-color as able to oust four-color printing for facsimile work if well chosen printing inks can be obtained. It is a large *if*, and in regard to it Dr. Aarland says:—"All color tables prepared as a help in trichromatic work do not meet the practical requirements. As soon as the correct mixing proportions are thoroughly understood, and as soon as we are able to express numerically the color quantities needed for the production of difficult tints, further complaints will cease. Such tables, forming a most valuable help in trichromatic work, may be forthcoming at no distant date."

T. Thorne Baker weighs the merits of the three-plate against those of the one-plate method in tri-color negative-making, and, like Sir Roger de Coverley, concludes that there is much to be said on both sides. He gives a modification of Dr. Miethe's panchromatic sensitiser, which produces a plate "of sterling quality."

"One in five hundred solutions of glycin red, chinolin red and cyanin blue are prepared; we will call these A, B and C respectively. Take twelve parts of A, ten of B, and add them to twenty-five of alcohol and fifty of water. Leave for a few hours, then add one part of C, filter, and add two parts of strong ammonia in one hundred of water. The plates should be bathed for five minutes or more. A solution of erythrosin and silver nitrate, or the two with a small proportion of uranin, gives a plate intensely sensitive to greenish-yellow."

A useful note by Dr. Reginald S. Clay concerns the twofold effect of a liquid filter on the field of a lens, the moral of which is to use as thin a filter as possible. That the aberrations worked out by Dr. Clay are not more

Digitized by Google

noticeable in process work is due to the small aperture at which the photo-engraver usually works, and also to the fact that the "defect" of the filter may actually improve the definition of a non-aplanatic and round-field lens.

Tri-color for half-tone poster work in, say, the large size of double crown, is the bold claim made by Burman Norton, who has specialised in poster reproduction, though whether he has actually put his suggestions into practice the article unfortunately does not say. Dr. Kock writes of tri-chromatic photo-litho by Valenta's sulphurised asphalt process, printing being done by electric light.

The scientific worker will study A. G. Bull's article on the "Color Patch Apparatus and its Applications," in which methods are given for the measurements necessary in quantitative tri-color work. Dr. Drysdale's lengthy review of the principles of tri-color tells the old story of color curves and color sensations, though, if we mistake not, much of it is contradictory of the author's more recent views on the subject.

As useful as anything on the subject is a little note by Guy Simons on obtaining tri-color blocks in exact registration at the margins. The same worker gives very full working details of Dr. Albert's collodion emulsion.

"The Future of Lithography" is discussed by Joseph Goodman, who mentions the extensive application of litho in the printing of art pottery, tin plates, and fabrics in collotype, copper and steel plate work in the many forms of chromo illustration. Discussing litho as a competitor of typographic methods in newspaper and letterpress work, some interesting though meagre details are given of the Monagraph, a machine weighing only 50 lb., and occupying a floor space of but 3 ft. by 2 ft. Its keyboard of 200 characters prepares an impression on transfer paper, which is then transferred to zinc or aluminium and placed on a cylinder. The transferring is said to be effected in three minutes, and the machine made ready for printing in five minutes, blocks also being transferred with the text.

Concerning the printing of half-tone blocks, the notes by C. Real and Arthur Cox should impress once again upon printers the methods and precautions needed in working from photo-engraved blocks. Mr Wheeler reports the growing use of the Metzograph screen on the Continent for direct printing on the metal from an ordinary negative, and in color reproduction. A. C. Austin republishes the "high-light" method worked out by him; W. T. Wilkinson gives a formula for a wet collodion which is as sensitive as collodion emulsion and also color-sensitive.

The process is as follows:—

2 per cent. collodion made with—

Schering's celloidine	150 c.c.
Zinc bromide	5 grm.

SILVER BATH.

Silver nitrate	150 grm.
Water	1,000 c.c.,

made decidedly acid with nitric acid.

The plate is coated in the usual manner and sensitised, then drained and immersed in a dye bath made up of

Erythrosin	1 grm.
Cyanin	0·25 ,,
Water, distilled	1,000 c.c.
Liquor ammonia	1 ,,

In this dye bath the plate remains for about three minutes, when it is drained, and put into dark slide for exposure.

Touching the vexed question of originals, their suitability for process reproduction is arranged in the following order by F. W. Brookman.

Digitized by Google

First.—Monochrome paintings in flatted oil, in which ivory black, toned with raw umber, is used in conjunction with flake white.

Second.—Monochrome painting in water-color, in which lampblack toned with sepia is used in conjunction with Chinese white.

Third.—A good transparency from original negative.

Fourth.—Certain kinds of slow, glossy bromide papers.

Fifth.—Enamelled P.O.P. prints toned in a rich gold bath to warm purple and free from double toning.

Sixth.—Deeply toned albumen prints.

Seventh.—Slow contact or gaslight papers.

Eighth.—Smooth bromide papers.

A point of commercial importance is touched upon by Frank Colebrooke, and that is the benefit a process man stands to gain from possessing a stamped valuation of his plant. Fire insurance companies will resist claims for screens, prisms, and lenses which seem to them preposterous, and a proper certificate should be kept—with the valuables themselves—in the office safe.

We might extend our notice of Messrs. Penrose's Annual to a much greater length, but we have quoted its literary contents in sufficient detail to show that the process man who does not find himself repaid by the purchase of the book must be very curiously circumstanced.

Current Topics

Developers for Tri-color Negatives.—Writing in *Photographisches Wochenblatt* on Unal, the solid form of rodinal now issued by the Actien Gesellschaft für Anilin Fabrikation, Professor Namias recommends the use of a soft working developer such as this, in combination with a contrast-giving solution like hydroquinone, the details being first brought up with unal and the right amount of strength imparted by the hydroquinone bath.

Hermann J. Schmidt has joined a photo-engraving firm in Scranton, Pa.

Basant Ram & Sons, Lahore, India, have closed their photographic and process departments.

"The Western Mail" of Perth, Western Australia, sends us its seventh Xmas number, an immense sheet of 76 pages full of half-tone illustrations and varied literary matter.

G. H. Frommann, who not long ago paid us a visit on his way back to the States, is reported to be setting up in New York, with Robert Nash as superintendent of the concern. He will make a specialty of trichromatic work.

"Camera Craft," our enterprising contemporary of San Francisco, which, under the editorship of Fayette J. Clute, is ever readable and interesting, proposes to take up process matters, and will devote a section of its pages in future to reproduction matters.

German Photo-engravers have appointed a committee of four—Herren Büxenstein, Giesecke, Von Schmaedel, and Schreiber—to select exhibits for the St. Louis Exposition. This jury of selection acts for the firms in the German Process Association, and it is stated that the exhibit will show America that "the only competitor they have to reckon with is German."

A Bacterial Theory of Orthochromatism.—A writer in the *Chemiker Zeitung* announces that microbes in presence of erythrosin show increased susceptibility to yellow and green light. Bacterium prodigiosus was used in his experiments, and it was found that subcutaneous injection of erythrosin gave rise to the phenomenon without any injurious results. Are we to have a bacterial theory of color sensitiveness?

"Engraving for Illustration," by Joseph Kirkbride (London: Scott, Greenwood & Co.; 2s. 6d. net).—Photo-mechanical processes are briefly reviewed in this manual of the reproduction methods. The volume should interest process workers, as it gives a history of illustrative methods from wood engraving to tri-color. It is clearly written and well printed, and contains two supplements by R. J. Everett & Sons' "ink-photo" process.

A "Process" Exhibition is to be held this year in the Victoria and Albert Museum, South Kensington. The organisation responsible for it is formed from the Board of Education and the Society of Arts. In addition to photo-mechanical processes, specimens

Digitized by Google

of color printing will be included. Sir William Abney is to act as chairman of an advisory committee. Inquiries should be addressed to the Secretary, Exhibition of Mechanical Engraving, Board of Education, South Kensington.

German Collotype Printers have formed a union to improve the bad state of trade. A large meeting representing employers and employed in all parts of the empire was held in Leipsic, and the "German Collotype Printers' Union," with headquarters at Leipsic, brought into existence. In addition to combining for the benefit of prices, the new Union will decide in matters affecting the conditions of employees. The provisional president is Herr G. Jährig of the firm of Dr. Trenkler.

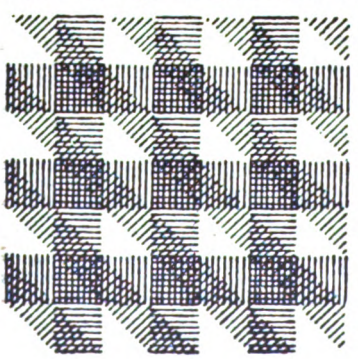
The Grün Tri-color Prints.—Referring to our note last month on the work of the Grün lens for tri-color, Dr. Grün writes:—"In reference to the discrepancy in text as to exposures, the text really referred to a portrait which there was not room to publish, and should have been deleted. The hand engraving in block of Miss Alice Davis is legitimate, as the desire is to show the result that can be produced by skilful workers having the negative as a basis: it is like the working up of a print for exhibition—everything is legitimate so long as the finished result is satisfactory."

Collotype Machinery.—Elsewhere we refer to the revival of collotype printing in this country, and in this connection may mention that the German collotype machines are obtainable in this country, as a reference to our advertisement pages will show. The "Schmiers" machine is the best known, and the latest type of this machine includes a number of improvements, of which the heating of the bed by electricity to prevent the sweating of the plate is perhaps the most interesting. The sole agents for these machines in Great Britain are Hunters, Limited, 26-29 Poppin's Court, Fleet Street, London, E.C.

"Something New in the West Countrie" is the title of a booklet designed and produced by Charles E. Dawson, and descriptive of the new establishment of the Jaeger Co. in George Street, Plymouth, likewise the design, inside and out, of Mr. Dawson. The production of the little volume is tasteful in the extreme, and sustains the illustrator's reputation. Even if it does not show Mr. Dawson's airy genius to better advantage than we have seen it before, it demonstrates the continuity of delicate yet virile decoration which he can preserve through a whole establishment, from the weathercock to the panels of the cash desk.

Steel-facing Half-tone Blocks.—Messrs. The Photochrom Co., Ltd., of 35-36 Hosier Lane, Snow Hill, E.C., write as follows:—"We beg to draw your attention to a new process we are adopting at our works for steel-facing half-tone blocks. By means of our new system the 'life' of a block is multiplied by ten, and where, say, for example, a 50,000 run has been considered passable, a 500,000 run may now be embarked upon with certain success. Our new method does not tend in any way to dull the brilliance of the block, as is very often the case with the old nickel-facing process, and when the steel facing begins to wear, the block may be re-faced, so that for periodical work and printers' stock blocks a very great saving is thereby effected at a trivial extra charge on the initial cost."

The "Half-Shade" Screen is the title given by Theodor Dittmann, newspaper editor, of 9 Mühlenbrucke, Neumunster-in-Holstein, Germany, to a kind of half-tone screen, for which a patent (No. 16,447, 1903) has been granted to him. It is claimed for the screen that it dispenses with the need of the cross-line screen when photographing the original. The manner in which the screen is said to work is thus "explained" by the patentee:—"The sensitive layer on the metal plate does not show the fine shades of difference, that is, does not reproduce the gradations of the tones; with a sufficient exposure all the dark parts and intermediate tones of the picture up to a certain degree of tone are reproduced as black, all brighter tones and the white parts are reproduced as white. Owing to the half-shade net a difference in the effect of the light is produced in all parts of the sensitive layer; the light first acts in the lightest parts of the negative where the brightest parts of the shade screen occur, the action then proceeding gradually according to the intensity of the shade in the half-shade screen. When the light has acted in the lightest parts of the negative through all shades of the half-shade screen, the black part of the picture is completely reproduced. In the weakly covered parts of the negative, however, the light has not yet acted through all parts of the half-shade screen; thus in the copy there is still white together with black, and the more white accordingly as the particular part of the negative is more covered. Through the parts of the negative corresponding to the white in the picture and most thickly covered, no



Digitized by Google

effect of light has yet occurred, so that the white of the picture is reproduced pure white, whilst, as is known, when the ordinary screen is employed, black parts constantly remain in the white on the screen negative and thus give the copy a greyish appearance."

The half-shade screen is to be produced "by copying or photographing, in various crossed positions, a system of monotone lines under varying degrees of exposure," and in other ways. The figure shows one form which the screen may take.

Lectures on Half-Tone.—A course of seven lecture-demonstrations is being given by the Principal at the London County Council School of Photo-Engraving, Bolt Court, Fleet Street, E.C. The lectures take place on Thursday evenings at 8 o'clock, and the cost to non-students of the school is 2s. 6d. the course. The series deals with various methods of obtaining typographic blocks having half-tones: the negative: apparatus required, types of cameras and lenses, screens, cross-line, chessboard, grained, metzograph: methods of holding the screen, and its adjustment: principles governing exposure: optical considerations in the formation of the half-tone dot: finishing the negative: respective advantages and disadvantages of wet collodion, collodion emulsion, and gelatine dry plates: the printing on to metal, fish-glue and dry enamel processes: rough etching and fine etching: finishing, mounting and proving: machinery required, choice of papers: the application of typographic methods to color work, etc.

Collotype Troubles through Gelatine.—It occasionally happens that the warm gelatine solution, whether chromated or not, gives a film on glass which shows a wave-like motion and tenaciously retains air-bubbles as it cools: the bubbles bursting as the plate is dried and rendering it useless through the markings thus produced. E. Valenta—after first quoting from Albert's *Lichtdruck* to the effect that these dots print light in the first proofs, and dark in later ones as they become inked—gives the results of investigating such defective gelatine.*

The sample was in thin, clear, almost colorless sheets, swelling strongly in water. When liquified and well stirred it formed a yellow tinted solution. The warm aqueous solution of the gelatine possessed a weak alkaline reaction and a characteristic smell resembling that of ammonia. On solidification it seemed as if certain parts of the apparently homogeneous solution solidified sooner than others, a fact which explains the characteristic movement of the gelatine on the glass. These portions, or nodules, have a higher melting-point than the other part of the gelatine, and can be isolated as follows:—The gelatine sheets are cut up and placed on the bottom of a beaker which is higher than it is wide. The latter is filled with water and left over night. It is then placed in a vessel of boiling water. The gelatine rapidly melts, and if the beaker is kept still, the concentrated solution collects at the bottom as a viscous liquid, whilst the nodules, melting less readily, rise to the surface of the water standing above the dense gelatine solution. There after a short time they form a greyish-yellow coherent mass, enclosing innumerable air bubbles.

This slimy substance is seen under a lens to contain numerous dark thin threads, which in the microscope were found to consist of plant-cells, apparently derived from a fungus. It seems likely, therefore, that the tough, colorless tanning body in which the fungi are embedded represents the product of the reaction of the fungus on gelatine.

The best proof that this slimy portion of the gelatine is the sole cause of its evil effects is that the solution remaining at the bottom of the beaker, when collected separately, is perfectly suitable for collotype work.

"The Half-Tone Process," by "Julius Verfasser" (Iliffe; 5s.).—The third edition of this work runs to nearly 300 pages, and it contains in addition a number of supplemental plates, most of which illustrate the versions of an original producible with screens of various rulings. This question is fully dealt with in Chapter II., in which the following table of rulings for different purposes is given on p. 28:—

	Lines per inch.
For large poster work,	50, 55, 60
„ rotary newspaper printing (stereotyped)	66, 72, 75
„ flat-bed quick newspaper printing	85, 90, 96, 100
„ photo-lithographic transfers	110, 115, 120
„ commercial, book and periodical printing	125, 133, 138
„ magazine and fine book printing	143, 150, 166
„ hand-finished fine catalogue engravings	175, 187
„ microscopic reproductions and fine detail	200, 220
„ photogravure, heliogravure, intaglio plates	240–400

Chapter III., on the Studio, deals chiefly with the camera and copying-board and the merits of the various methods of supporting them. Lenses, prisms and mirrors are likewise discussed in this chapter.

In the pages on the dark room, illumination, the arrangement of the silver bath, dropping bottles, negative racks and other fitments are fully considered. The printing

* *Photographische Korrespondenz*, January, 1904, p. 27.

Digitized by Google

room, etching room and electric light installation occupy another three chapters; whilst mounting and proofing and materials bring the first part of the book to a close at page 190. The remaining 110 pages treat of the technique of block-making, commencing with wet collodion and gelatine dry plates, and discuss in the chapter on negative-making, stops, screen distances, exposure, development and after-processes. Then come printing processes—albumen, bitumen, enamel, "cold" and "dry" enamel. Etching by dragon's-blood, rolling up and other processes, bring this remarkably complete manual of an important craft to the concluding chapter, which deals with the mounting, routing and mechanical handling of the block. We cannot refrain from congratulating the author on his labors. They betray the careful writer and experienced technician, who would add to his reputation were he to draw aside the thin veil of anonymity and dismiss the un-German "Verfasser" from the title-page for evermore.

"Half-Tone Printing: a Practical Work on the Printing and Making-Ready of Half-tone Blocks." By Arthur Cox.—As an advertisement of the productions of the Arthur Cox Illustrating Co., Ltd., Birmingham, the matter of this 32-page booklet is too long, especially as it is set with page after page of solid type unrelieved by paragraphising. The story would be all the better for being put into fewer words. For the rest the production reflects the greatest credit on the technical methods of the company, who both prepared the blocks for it and printed it. It is issued gratis to customers of Messrs. Arthur Cox: to others its price is sixpence.

Process Association in the U.S.A.—On January 3rd a joint meeting of Photo-Engravers' Unions Nos. 1 and 23, of New York City, together with all affiliated photo-engravers that were invited to attend, was held for the purpose of effecting an amalgamation of interests, and for the formation of one union for the benefit of all.

Nearly seven hundred were in attendance, over five hundred of which were members of either No. 1 or No. 23, in good standing. Differences were buried, and the business was conducted with perfect harmony, resulting in the establishment of a new union to be known simply as "Photo-Engravers' Union of New York."

Officers for the new organisation were nominated, and the balloting is now being conducted in the various chapels, the returns to be computed by a ballot committee at Union headquarters. That this new organisation will be an important factor in the conduct of the engraving business, both in New York and elsewhere, is a foregone conclusion.—*Process Review.*

Tri-color Filters.—Messrs. Meister, Lucius & Brüning of Hoescht-on-Maine, whose agents are Messrs. Fuerst Bros., 17 Philpot Lane, have published formulæ for filters to be used with plates orthochromatised with Orthochrom T. Gelatine is the vehicle of the dyes, and the various dyed solutions of it are used in the proportion of 7 c.c. per 100 square centimetres of surface. In each case similar filters are cemented together with Canada balsam.

A. *Filters for the subtractive method:*—1. *Blue filter.*—Dissolve by aid of heat 1 grm. of methylene blue, free from zinc chloride, in 100 c.c. of water, adding 5 or 6 drops of acetic acid. Add 6 c.c. of this solution to 100 c.c. 8 per cent. gelatine solution, and filter.

2. *Green filter.*—Dissolve by aid of heat, tartrazin, 3 grm., patent blue, 6 grm. (or green I. for filters, 9 grm.) in 330 c.c. of water, and filter. Add 6 c.c. of this solution to 100 c.c. 8 per cent. gelatine solution, and filter.

This filter passes a little of the red at the end of the spectrum. To absorb this red, dissolve:—Tartrazin, 2·5 grm.; patent blue, 6 grm; naphthol green, 4 grm., in 400 c.c. water, and add 5 c.c. of the solution to 100 c.c. 8 per cent. gelatine solution.

3. *Red filter.*—5 grm. of Red I. are dissolved in 200 c.c. of warm water; add 5 c.c. of the solution to 100 c.c. of 8 per cent. gelatine solution, and filter.

The relative exposures for plates prepared with Orthochrom T are as follows:—Blue, 1; green 3; red, 3.

B. *Filters for the synthetic method:*—1. *Blue filter.*—Dissolve in the heat violet crystal, 3 grm.; methylene blue (free from zinc chloride), 1 grm. in 100 c.c. water, adding 5 to 6 drops of acetic acid. Add 7 to 8 c.c. of this solution to 100 c.c. of 8 per cent. gelatine solution, and filter.

2. *Green filter.*—Dissolve, by aid of heat, tartrazin, 3 grm.; patent blue, 1 grm. (or Green II. for filters, 7 gm.), in 140 c.c. of water. Add 7 to 8 c.c. of this to 100 c.c. 8 per cent. gelatine solution, and filter.

To absorb the extreme red, dissolve tartrazin, 6 grm.; patent blue, 1 grm.; naphthol green, 2 grm., in 180 c.c. water, and add 7 to 8 c.c. to 100 c.c. 8 per cent. gelatine solution.

3. *Red filter.*—Dissolve tartrazin, 4 grm.; Rose Bengal, 3·5 grm. (or Red II. for filters, 7·5 grm.) in 150 c.c. water, and add 7 to 8 c.c. of the solution to 100 c.c. 8 per cent. gelatine solution.

The relative times of exposure for plates prepared with Orthochrom T will be about as follows:—Blue, 1; green, 5; red, 8.

If the dyes are chemically pure, the filters will dry uniformly and retain their transparence. The dye solutions can be kept.

Digitized by Google

No. 124.—April, 1904.

THE
PROCESS PHOTOGRAM
AND ILLUSTRATOR.

PRACTICE AND THEORY OF HALF-TONE ETCHING.

By E. Klimsch.

(Translated, by permission, from *Klimsch's Jahrbuch*, 1903.)

The etching of half-tones is a subject which, unlike the photographic side of "process," has hitherto received but scanty treatment in technical literature, although it has long played an important part and requires much skill and experience in its execution. The reason may be that the etcher is not usually a writer, or that he is averse to giving away in articles the knowledge and experience gained in practice. Of formulæ for sensitising and etching baths there is no lack in the technical press, but the precise reasons for their composition frequently occupy a secondary place. In the following article an outline of half-tone according to tested formulæ will first be given, without exhausting the variations of the different preparations. The purpose of the separate operations and the reasons for the different modes of treatment will afterwards be considered.

The well polished copper plate is first freed from traces of fat by grinding with the finest pumice powder mixed with water. The plate is thoroughly rinsed in water and the following enamel solution (filtered) applied:—

A.	Water - - - -	340 c.c.	12 oz. (fluid)
	Fish glue - - - -	150 „	5¼ „ „
	Albumen - - - -	100 „	3½ „ „
B.	Water - - - -	200 „	7 „ „
	Potass bichromate - -	12 gm.	185 gr.

The two solutions are filtered.

In order to remove the water still adhering to the plate, this sensitising solution is poured three times over the plate, draining off after each application. The plate is then dried, film downwards, in a whirler over a hot iron plate. It is made only so hot that it can be comfortably handled. If overheated at this stage the shadows develop badly or not at all. As soon as cool, the plate is laid film to film with the negative in the printing frame and

Digitized by Google

pressed thoroughly into contact. This latter is an important point, best provided for in the screw frames. The negative may be exposed to diffused daylight, sunlight or electric light. The time, depending as it does on the negative as well as the light, can be rightly judged only by experience. Even an actinometer does not supply a certain means of arriving at correct exposure.

The print is developed in cold water, and after about two minutes dipped in a bath of methyl-violet in order that the progress of the print may be more plainly seen. After rinsing off the excess of dye the plate is dried by heat. With normal negative, too short a printing obviously means the loss of the lights, whilst too long printing causes clogged shadows. Correct exposure having been obtained, the enamel film is burnt in over a gas or spirit flame until the image is chestnut brown in color. If not well burnt in, the film will not withstand all the various etchings: if too strongly burnt, the plate may be spoilt by the film leaving it during etching.

Any specks and spots are now touched with "pouch varnish" (leder-lack) or asphalt varnish, and if necessary an outer line given to the picture, or a white inner line put in with a graver. In the case of vignettes the superfluous parts of the picture are shaved off, and the first etching begins as soon as the back has been coated with shellac varnish. For this, as for all the subsequent etches, the solution is ferric chloride (iron perchloride) of 38° B.* The reason why a solution of one strength can be used as for the various etching baths is that a longer or shorter immersion therein supplies the etcher with all the means of obtaining any wished degree of etching. As no gas is formed when iron perchloride acts on copper (different from zinc and nitric acid), no special violent action takes place even with strong etching. By keeping the etching bath of one strength definitely, a much safer basis is obtained on which to control the various etchings.

After the first or preliminary etch the so-called deep etching of the dots is done, in which, after inking and dusting the plate, only the ground is deeply etched, the sides of each dot being protected from the bath. After removal of the asphalt and dye by means of turpentine, the various fine etchings ("ton-ätzung") are taken in hand in several stages, the image being painted in parts with varnish. Retouching with a needle and roulette now follow, any too light tones being likewise worked up with the burnishing tool. If the block is a rectangular one, the edges are facetted in the machine. Blocks with tones gradually shading off are specially worked up at the edges, and superfluous portions routed out. The block is then mounted on wood or transferred to its iron underlay. In the following articles the various stages in the process above outlined will be taken in detail.

(*To be continued.*)

"Stolid."—"*The Process Photogram*" (says *The Lithographic Gazette*) "continues its course month by month in its stolid, thorough way of imparting all the possible technical information to the worker in process, collotype, and photography. Ten years has this now famous journal been before the trade, and in that ten years can claim to have done for the trade more to solve the mysteries of the processes, and to secure a more thorough understanding of the true basis of all photo-mechanical work in collotype and photo-lithography, as well as monotone and tri-color work, than any other journal of the trade, past or present."

---

* 1·359 sp. gr. = 39 gms. Fe_2Cl_6 per 100 gms. = 53 gms. Fe_2Cl_6 per 100 c.c.—EDS.

Digitized by Google

MODIFIED COLLOTYPE FOR BEGINNERS.

By Henry G. M. Barstow.

(*Continued from p.* 21.)

The Preparation of the Plates.

A plate, if it is reasonably good, will produce at least three even prints without re-damping—some very good plates run to as many as seven or eight: a poor plate may require damping after every second pull, or even after each pull, but if a plate requires damping each time and any considerable number of prints are required, I prefer to make a fresh plate, as under such circumstances printing becomes tedious. Sometimes a plate may be considerably improved if it is over-exposed by putting it for a time under a damping solution consisting of one third of the ordinary damping solution and two thirds water, to which has been added five or six drops of liq. ammonia ·880. It is easy to see if the plate has been over-exposed, as the lights do not clear and the image takes the ink all over, and gives a print wanting in contrasts and pluck. The bath of ammonia and water does much to rectify the error of exposure, but the worker must remember that having treated the plate with ammonia and having tipped it off, he must spread the ordinary damping solution over the plate for a few moments before resuming work on the plate, or he will find a kind of veining on the surface which is difficult to get rid of. In the case of a very much over-exposed plate, only a few good prints can be obtained, at most six or eight, perhaps a dozen, by care and management. Should a larger number be required, a fresh plate should be made.

In the case of a very much under-exposed plate, the ink only takes upon the darkest parts, leaving the half-tones almost white. The relief is very strong, and it is more difficult to get the ink out of the extreme darks on to the paper. The remedy for this is to place the plate under a damping solution of two thirds glycerine and only one third water, and leaving this to stand some considerable time—an hour or more, even half a day; this will have the effect of softening the image, swelling the gelatine in the darkest parts and flattening the relief. After such treatment a not too under-exposed plate may give very good results and work for a considerable time, but nothing quite remedies these errors of exposure, and only a nicely exposed plate will give any considerable number of really fine prints.

It will always be found, even with a perfectly exposed plate, that the first pull after damping is very hard with strong contrasts of black and white—and that the more copies are taken without damping the more "all-overish" the image becomes.

To get all the copies of an even quality is not so difficult as it may at first appear; it merely means a little skill with the roller. If, for instance, the plate has been inked as directed for the first time after damping with the "etch," it will be seen probably to ink up very hard; the worker in that case must take the roller and gently and very slowly and evenly pass it over the plate; the roller being fairly charged with ink, this will put a film of color over the half-tones. If the half-tones persistently refuse to appear, use a little thinner ink—ink with a shade more varnish for this purpose.

In the case of under-exposed plates this thinner ink will also be found very convenient. The second pull will not be quite so hard as the first, and will require less of this treatment; the third will be softer still, and so on, until the image inks too flatly and a fresh application of the damping

Digitized by Google

solution is required. This should be poured on to the centre of the plate, spread with the finger and immediately sopped up again with the sponge, and dabbed dry with a pad of rag: the plate is then immediately ready for re-inking. If the plate has to be put away for a time, say an hour—for luncheon—it must be left under the damping solution, and can be taken up again, without any deterioration, and the work continued.

It will be seen from the foregoing remarks that all the pulls can quite easily, by judicious management, be made to appear of the same quality and tone; and a little practice with the rollers will soon give the necessary skill. The roller passed very slowly and heavily over the surface, lays the ink on; the same passed quickly and lightly over it takes the ink off, and is invaluable when the image is getting a little flat, or when the plate is over-exposed and has a tendency to ink all over. Soft ink which has much varnish mixed with it always gives a more "all-overish" result, and hard ink which has little or no varnish gives the opposite result. Keeping these simple facts in mind, a great deal of variety and any special quality that may be thought desirable can be obtained. By a little faking with the roller when inking, a part of the plate can be made to appear brilliant while the top or bottom or surrounding parts may be left merged in deeper tints.

If it is desirable to have a margin of white paper round the print, a "mask" must be cut in either tinfoil or some tough oil paper, which does not stick, and this laid over the plates after inking, and before the paper is laid on. The worker should have several of these to hand, cut the right size, in case they get dirty or torn; care must be taken that they are made of thin material, or the edge of the mask will cut the surface of the plate, while it is under pressure in the press.

Another way of making a margin, and one which is less trouble, is to mask the original negative with tinfoil, stuck on with a little dextrine or other adhesive, before it is exposed against the bichromated plate, when the plate itself will print with a clean margin by the light of nature, Only—and note this—some papers have a tendency to stick to the surface of the plates when in the press; or rather to that part of the surface where there is no ink, and in consequence more particularly to the white margins; this can be avoided to a great extent by painting the margin with a little ox-gall, but the effect of this passes off after a pull or two, and has to be re-done, which becomes a nuisance. It also has the disadvantage, if the ox-gall be wet, of affecting the roller and preventing the ink spreading evenly; it also slightly discolors the ink. Some papers have little or no tendency to stick, and if working with a plate that has a margin, one of these papers should be used if possible. Clay-surface faced papers stick worst of all.

Having inked the plate, lay the paper on it, place the plate upon the india-rubber pad, and place the second pad over the whole; then pull the press—great pressure is not needed, and may break the plate, so it is better to start with an easy pressure, and to tighten the press (if all the ink has not been taken off the plate and transferred to the paper) until the exact pressure is obtained. Directly all the ink comes off, and the print is clear and even, you have the necessary pressure and there is no object in exceeding it. It is as well occasionally to rub the surface of your pad (upon which the plate rests) and also the under surface of the upper pad, with a little French chalk; this ensures the evenness of the pressure. Plates may break in the press for the following reasons:—over-pressure, moisture upon the under side of the glass, grit on the pads, or a flaw in the glass plate. The last is the only accident which cannot be avoided. When I first worked these plates, breakages were fairly frequent. I now do not break one plate in fifty.

Another accident which a beginner will meet with, is that the film will

Digitized by Google

tear up in the inking; this is caused by the too rough use of the roller, and never occurs when the correct manipulation of the roller has been mastered, always provided that the plate itself is not faulty, either through uneven coating or through the presence of dirt in or under the film. These faults rest with the manufacturer, and are, I must say, of rare occurrence. Quarter-plates are too thin and tender to use; half-plates are usually satisfactory, but whole plates are more certain. This is the reason why I recommend (if the pictures are small), that two or three negatives be exposed on the same plate and pulled together, the prints afterwards being cut apart: this, moreover, means one inking and one pull on the press, in order to produce three quarter-plate pictures, as against three inkings and three pulls, if they are separately exposed and printed.

It is sometimes difficult to avoid the "fluff" coming off the rags and sticking to the plate. If it does, take it off quickly with the sponge damped with the glycerine solution, and dry the surface with the blotting paper. If "fluff" has gathered on the roller, clean the roller with a rag moistened with turpentine; after it is quite clean let it rest a moment so that the spirit may evaporate before using it again. If the inking slab becomes dirty with dust, fluff or grit, which easily stick to it, clean it with turpentine and polish until quite dry, then spread fresh ink. Always clean the rollers and slabs with turpentine when leaving off work. Never leave them dirty—it only increases your trouble later on, and it spoils the gelatine rollers. Take care also that the room you work in does not get too hot, and that direct hot sunlight is not allowed to stream upon your rollers nor upon the ink, which it quickly dries up; if the rollers be left in a hot sun or too near a hot stove, they may partly melt and become untrue, which renders them useless. If this should happen, however, they can be sent to the manufacturer to be remoulded. Rollers improve with use; their surfaces become smoother, and great care should be taken of them. Your room should never be too hot (not above 70° F.) nor very cold. A small stove in winter will keep the temperature even (not below 60° F. if it can be helped). The same applies to the dark room in which the bichromated plates are left to dry; if it gets very cold the plates dry too slowly; if the temperature is very hot the gelatine is apt to partly melt and your printing image will lose its crispness. Plates that have been exposed and are impressed with an image should not be left to stand in the sun for the same reason—once the surface has lost its crispness through overheating, nothing can remedy it.

When you have taken as many pulls as you require from a plate, and wish to put it by indefinitely, wash all the paint off with a soft rag and turpentine, and then immerse the plate in a bath of methylated spirit for about five minutes or more, and put it to dry; when the plate is quite dry it can be put away in an envelope or between sheets of smooth paper and kept in a box like an ordinary negative. It will thus keep for an indefinite length of time, or it can be taken up again when wanted, re-swelled in water, and covered with the "etch" just like a new plate. Should you wish, however, to put a plate by only for a day or two, then merely put it aside on to a plate rack, and it is ready for use again when you will.

Digitized by Google

A NEW COLLODION EMULSION.

By Baron von Hübl.

(Translated from *Das Atelier des Photographens.*)

COLLODION emulsions which keep well and work free from fog usually possess only slight sensitiveness, and it is customary to improve them in this respect by treatment with a soluble silver salt before use. This process has the further advantage that the silver salt aids the action of dyes when sensitising the emulsion for color. Specially active for this purpose are the silver salts of dyes of the eosin group, as they combine in themselves the action of the silver and of the dye, and compare favorably with other silver salts in regard to freedom of the emulsion from fog. Dr. Albert uses such silver compounds dissolved in ammonia, adding these to the emulsion or using them as a bath for the coated plates. The plain dye-stuff can also be added to the emulsion and the plates bathed before exposure in a dilute silver nitrate solution.

While faultless results may be obtained in this way, no practical process man will deny that such sensitive plates are by no means easy to work. The soluble silver salt is a substance which usually takes part in reactions, and the slightest impurity from imperfectly clean plates or from dust gives rise to marks and specks, whilst a general fog may frequently arise. Thus the negative is sometimes not all one could wish, generally tending to hardness; the plate, in the case of originals with deep shadows, requiring so long an exposure that the lights are blank and chalky, whilst the details of the shadows are missing. An emulsion in which one could dispense with sensitiveness by means of silver salts would be free from these defects; and as the result of numerous experiments which I have made with Herr G. Winter, a result which is partially successful has been obtained.

One must recollect that a dye can sensitise only when it actually dyes the grains of silver bromide. Anything which aids the dyeing process increases the activity of the dye, and anything which hinders dyeing depresses the color-sensitiveness of the plate. Soluble bromide in the emulsion prevents or weakens the dyeing of the silver bromide, and hence all emulsions containing excess of bromide are difficult to color-sensitise. If, however, the excess of bromide is removed by addition of a silver salt, the dye attaches itself to the silver bromide, and brings about the sensitiveness of the emulsion to a definite portion of the spectrum. A further addition of silver usually does not increase the action of the dye, and in many cases lessens it, as it may expel the dye adhering to the silver bromide. Only in the case of those coloring matters which form insoluble compounds with silver, such as eosin dyes, does an excess of silver produce increased sensitiveness, a more intense dyeing of the silver bromide here taking place.

On the other hand, soluble chlorides act quite differently in the emulsion. They exert no influence on the dyeing of the silver bromide, and therefore in no way diminish the intended color-sensitiveness. For this reason emulsions of silver bromide which contain some chloride of silver are far more suitable for the preparation of color-sensitive plates without the addition of silver salts. In such emulsions there must be no soluble bromide, because the latter reacts with chloride of silver, converting it into silver bromide and forming a soluble chloride. In order to prepare emulsions containing silver chloride it is only necessary to replace part of the bromide by the chloride. In doing this it is important that the proper proportion of bromide is not

Digitized by Google

exceeded. On the other hand, the proportion of added chloride is not of great importance. It does not matter whether the chloride is added alone or with the bromide to the mixture of collodion and silver.

With these facts in mind, the preparation of an emulsion which is simple and satisfactory may be undertaken. Experiments in preparing a pure silver bromide emulsion show that in the presence of ammonia it is easy to obtain an extremely fine-grained emulsion, and that the characteristics of the collodion, its dilution, etc., are almost without influence. If, however, the emulsion is made in the presence of acids, the silver bromide is curdy, unless one works with a large amount of alcohol and ether, mixes very slowly and carefully, and suits the whole process to the character of the collodion. Emulsion prepared with ammonia tends less to fog than that made in the presence of acids, even if the acid be aqua regia. Ammonia does not belong to those substances which tend to produce fog in collodion emulsions. On the other hand, it tends to clearness of working, and it is possible, as Luppo Cramer has shown,* to add an appreciable proportion of ammonia to a washed emulsion without the clearness of the negative suffering in the slightest.

It is generally known that ammonia produces a rapid alteration in bromide of silver, which is known as "ripening." The emulsion, which, viewed by transmitted light, is first red, becomes grey, and then violet and blue, whilst the finely-divided silver bromide gradually becomes coarse in grain and plainly crystalline. No increase of sensitiveness, however, takes place in this process. Its result is only in the direction of rendering the emulsion more liable to fog, and the coarse grain frequently renders the negative useless. Ammonia, therefore, is not a desirable reagent to apply to silver bromide, and it is usual, by adding acid or by speedily washing the emulsion at the grey stage, to remove it. The ripening process, however, at any rate, takes place only when a soluble bromide is present with the ammonia. With bromide absent, a washed emulsion when treated with ammonia does not suffer this ripening of the silver bromide. The emulsion retains by transmitted light its red color, and the only difference is that the collodion becomes thinner and finally decomposed.

As also in the presence of soluble chloride, the silver bromide likewise remains unaltered. The preparation of a chloro-brom emulsion was tried with ammoniacal silver, and it was found possible in this way to prepare an extremely fine-grained yet fairly rapid emulsion, which was amenable to sensitising with dyes. The emulsion contains silver chloride dissolved in ammonia, and its good properties must apparently be ascribed to this mode of preparation. It contains also excess of chloride, possessing sensitiveness by reason of the excess of silver, and good keeping properties and freedom from fog by reason of the excess of chloride.

The addition of a soluble silver salt, or the bathing of the plate in silver nitrate solution, produces no increase of sensitiveness in the case of emulsion made as above. Were an acid such as acetic acid to be added to the emulsion, it might be thought that by decomposition of the silver chloride dissolved in the ammonia the relatively great sensitiveness would be lost. This, however, is not the case, and it seems that the emulsion owes its sensitiveness not only to the soluble silver chloride, but also to the particular conditions under which the silver *bromide* is formed.

Coming now to the preparation of the emulsion:—700 c.c. (2 oz., 300 minims) 4 per cent. celloidin collodion are placed in a bottle of 1½ litres (52 oz.) capacity.

The silver solution (*a*) is made as follows:—50 grm. (1 oz., 330 gr.)

* *Photographische Korrespondenz*, 1903.

Digitized by Google

of fused silver nitrate are placed in a glass flask with 50 c.c. (1 oz., 360 minims) of ammonia of ·91 sp. gr., and the two shaken until a clear solution is obtained. Should the solution not become completely clear more ammonia must be added. 100 c.c. (3½ oz.) of 95 per cent. alcohol is then added, the mixture allowed to cool, and any crystals which separate brought into solution again by the addition of a little water—3 to 10 c.c. (50 to 170 minims). The solution must be completely clear. It should not be necessary, nor is it advisable, to filter it.

The bromide solution (*b*) is made by weighing out *carefully* 27 grm. (460·5 gr.) of dry ammonium bromide into a glass flask with 40 c.c. (1 oz., 200 minims) of water, and warming the mixture over a gas or spirit flame until the bromide dissolves. 100 c.c. (3½ oz.) of alcohol and 15 c.c. (½ oz.) of alcoholic solution of lithium chloride, 10 per cent.,* are then added, and the flask stood in hot water to keep the salts in solution. The cooled silver solution is poured into the collodion in the dark room, no special precaution being necessary. The mixture is well shaken. A part of the silver salt will be precipitated in the form of small crystals, but this does not matter. The hot bromide solution is then added in about fifteen separate lots, the bottle of collodion and silver being thoroughly shaken between each addition in order to avoid the formation of any coarse silver bromide particles. When all is in, which takes from ten to fifteen minutes, the bromide flask is rinsed out with a drop or two of water and then with a very little alcohol, and these washings likewise added to the emulsion. The whole is then shaken violently for three minutes, and put away for two or four hours. The sensitiveness does not increase during this time, but the emulsion becomes thin and much easier to work. Too long standing at this stage is to be avoided, as the collodion thereby becomes tender, and the film liable to dissolve when negatives are varnished.

To see that the emulsion is in the right state a small sample is poured on to a glass plate, a little alcohol and ether dropped on it, the whole rubbed with the finger, and the film observed by transmitted light. It should be orange-red, without any tendency to grey, which latter is a sign of the coarse form of silver bromide. Should it show a brown or brownish-grey color, the bromide solution has probably been added too much at a time, or too great an addition of water was made. If the emulsion be grey or bluish-grey, probably some gross mistake has been made in weighing out the chemicals. For example, if 29 grm. of ammonium bromide were used instead of 27, the emulsion would be of pure silver bromide without chloride, and the large proportion of ammonia would soon bring about a blue-grey coarse emulsion. It is well also to test for the necessary excess of chloride. For this purpose 4 to 5 c.c. (70 to 85 minims) of emulsion are placed in a test-tube, about 10 drops of nitric acid added, and about 10 c.c. (170 minims) of water. The contents of the tube are well shaken and filtered into a second test-tube, and a few drops of silver nitrate added to the clear filtrate.

There should be a copious white precipitate. If the solution remains clear, it is a sign that there is an excess of silver in the emulsion, which could only come about by weighing out a wrong proportion of silver, or by wasting the bromide solution in making up the mixture. When these tests have shown that it is in the right state, the emulsion is treated with water. 300 c.c. (10 oz.) of distilled water are added to the emulsion, at first in small quantities. The mixture is well shaken after each addition, and then the solution poured into a vessel containing about three litres (105 oz.) of ordinary water. After thoroughly mixing or shaking, the whole is left to

* 10 grm. (154 gr.) of dry chloride of lithium are dissolved in 10 c.c. (170 minims) water, diluted with 90 c.c. (3 oz., 80 minims) of alcohol, and filtered.

Digitized by Google

settle, the solution poured off, and the water renewed. Clean water is poured on five or six times, and finally the precipitated emulsion collected on a linen filter. The filter is folded, and as much water as possible wrung out of the emulsion, which is then deprived of its remaining moisture by repeatedly drenching it with alcohol and squeezing the liquid out again. We thus get a fine, sandy powder, which is dissolved, all wet as it is with alcohol, in from 350 to 450 c.c. (12 to 16 oz.) of alcohol and 400 to 550 (14 to 17½ oz.) ether, and filtered in the usual way through wash leather, which is also washed with the alcohol-ether mixture. The properties of the emulsion depend appreciably upon the mixture of alcohol and ether used for this solution, for the strength and brilliancy of the negatives are determined by the proportion of the silver. The method of preparation has the advantage that the emulsion may be rich in silver and collodion and yet extremely fluid.

The freshly-prepared emulsion at first works somewhat foggy, but gives, after a few days, glass-clear negatives. It is about twice as sensitive as a wet iodide of silver plate developed with a physical developer. Whilst the wet plate somewhat resembles collodion papers in its short scale of gradation; the emulsion is more like platinum paper in its longer scale, giving negatives full of gradation in the shadow and well modulated high-lights. In certain cases, such as the reproduction of dark oil paintings, this soft gradation is a great advantage, but when photographing from brilliant originals, or those with deep shadows, it is not so easy to obtain the necessary strength in the lights with clear shadows. Least of all is such an emulsion suitable for half-tone work, as here, where an opaque dot is wanted, it is best to have a hard-working plate. There is, however, a very simple means of giving any necessary degree of brilliancy or hardness to the plate, albeit at the expense of sensitiveness. This is the addition of a silver chromate, which here plays the same rôle as in platinum or collodion paper. A freshly-prepared mixture of 5 c.c. (85 minims) of 1 in 100 ammonium bichromate solution and of 15 c.c. (½ oz.) of alcohol is made, and ·5 to 3 c.c. added per litre of emulsion (2½ to 15 minims per 10 oz.). Great care must be taken in making this addition—it reaches its full effect only after one or two days—not to go too far, as 1½ c.c. (25 minims) depresses the sensitiveness to one third, and 3 c.c. (50 minims) to a sixth. Emulsions containing chromate in this form give negatives of great strength and clearness. The addition of eosin produces a similar but more favorable result: it keeps the negative clear and increases its brilliance without diminishing the sensitiveness of the emulsion.

(To be concluded next month.)

Embossed Papers.—It has recently been recognised that quality of surface can be made to contribute, just as color does, to the attractiveness of papers. The antique surfaces of early hand-made papers are again coming into vogue, and these have been supplemented by embossing rolls, which give pebbled, linen-surfaced, and other patterns to the texture of cover and book papers. This process is also applied, with certain modifications, to the covers and coated papers after titles, decorations, or illustrations have been printed upon them. *The Printing Art* for February contains an example of this process, in which an illustration is printed upon a harmonious tint of coated paper, having the smooth surface necessary to the best results in half-tone work. The sheet was then pebbled, softening the lines and intensifying the high-lights of the subject. The same issue also contains interesting examples of different colors and textures of cover papers. *The Printing Art* is issued by the University Press, Cambridge, Mass.

Digitized by Google

A SCREEN FOR DRY PLATE HALF-TONES, WITH SOME PRACTICAL NOTES.

By William G. Breuker.

(From *The Process Review*.)

RESPONDING to a request from the editor, Mr. Austin, for a description of the half-tone screen which I devised for making half-tone negatives for three-color work, where it is necessary to have one line of the screen predominate, I not only comply, but presume so far as to give a few other suggestions from my experience with three-color work.

The necessity for trying to modify the ordinary screen was urged upon me by the difficulty in controlling the one-line effect when using the gelatine dry plate direct method for three-color work. When working the *indirect* method by means of positives and wet-plate half-tone negatives, this one-line effect is easily obtained. But as I favored the direct method (although the results were so uncertain at times), I was unwilling to give it up. I thought a different kind of half-tone screen might help matters, and after some experimenting I found the following to be the best combination:—

I made two contact copies from one of Mr. Max Levy's single line ruled screens on plate glass coated with printing-out collodion emulsion (as given on page 100 of Austin's book on *Tri-Color Engraving*). One of these copies I intensified in such a manner that the lines were perfectly opaque; the second copy was merely fixed and toned in a platinum bath to a more neutral color, the lines being transparent. The two copies, when crossed and sealed, formed the screen, and when used in conjunction with stops having *round* apertures, will give the one-line effect that three-color operators desire in their negatives. This one-line effect can be neutralised by using a slit stop running at right angles to the opaque line of screen, in which case the negatives will resemble the ones made with an ordinary screen and round aperture stops.

The editor's query, "Do you think this screen will work well with collodion emulsion?" I cannot answer, as I have had no opportunity to try them together. My collodion emulsion experimenting was done before the time of making this screen, fully five years ago. The emulsion could not be bought then as now, and operators were forced to make their own. The only sensitiser I could procure then was for the red printing negative, and to utilise what little knowledge I had of collodion emulsion I worked out the following method, by which I secured two negatives direct and the third indirect, a saving of four operations. The yellow printing negative was made direct, using half-tone screen and wet plate. As color-screen was unnecessary, two pieces of plain glass were substituted. The red printing negative was made direct on collodion emulsion stained with eosin-silver, using a green color-screen. The blue printing negative was made without the half-tone screen on a red-sensitive gelatine dry plate, using orange color-screen. From this negative I made a contact positive, and this was placed face to face with a collodion emulsion dry plate, inside the plate-holder next to the half-tone screen, with the back of the positive towards the lens.

The rest of the operation is the same as making half-tones from positives outside the camera, only in figuring the screen distance the thickness of the glass on which the positive is made must be taken into consideration, as it throws the sensitive plate that much further away from the half-tone screen. A piece of white paper should be tacked on the copy board so as to throw an even flood of light into the lens. In carrying out this method of working, I found there was a difference in size between the two negatives made direct

Digitized by Google

and the one made indirect, but this was rectified by cementing to the orange color-screen, used in making the blue printing negative, a piece of plate glass of the same thickness as the half-tone screen used in making the yellow and red printing negatives.

These three-color negatives were used for lithographic purposes, and were printed on paper and then transferred to stone. This required *unreversed* negatives. When I tried to use the above process with a reversing mirror, I encountered much trouble. The yellow negative by the wet plate process was easy enough, but the collodion emulsion negative invariably gave me trouble. Why this should be so I cannot say. Possibly using a prism (or, in my case, a mirror) may cause some disturbance when used with collodion emulsion. I have been told that the same trouble arises when a prism is used with the gelatine dry plate direct three-color process. If I remember aright, I thought at the time that the color-screen in conjunction with the reversing mirror was responsible for the trouble. It was chiefly to overcome some of these obstacles in working the direct three-color method that a Philadelphia operator combined the half-tone and color-screen, patented February 27th, 1900, No. 644,451. Anyway, when I worked without the reversing mirror these annoyances disappeared.

While on the subject of red-sensitive gelatine plates, I want to call the attention of three-color operators to Alizarine-Blue S. as a sensitiser. I have bathed any number of dry plates according to Wellington's cyanine formula, given in the April number of *The Process Review*, and if cyanine was always trustworthy, there would be nothing better to be desired. Alizarine, while a little slower than cyanine, can be relied upon to give uniform and clean results. A few years ago, when alizarine-blue was so highly recommended by several German authorities, I procured some of the dye and bathed plates according to the published formula. The plates proved to be red-sensitive, but nothing compared to a good cyanine bathed plate, and I could not obtain any better results with alizarine-blue until the publication of an article on this same dye by Dr. Victor Schumann in *Anthony's International Annual* for 1898, page 207. In discussing the effect of the addition of different substances to the dye to enhance its red-sensitiveness, he writes thus: "Ammonia increases the red action to a striking degree, without influencing the blue action. If the spectrum is taken on plates, which were bathed in alizarine containing various quantities of ammonia, the red maximum will increase with the quantity of ammonia, while the blue maximum remains at its utmost limit. This appearance was so far unknown. *I publish it herewith for the first time.*"

After reading this article, and altering the formula accordingly, I had better success. The formula I herewith append is a one-bath solution, no preliminary soaking of the plate being necessary. In extreme hot weather, a little formalin will prevent the gelatine running off the plates while being dried, but if too much is added, it prevents the penetration of the developer, and lack of density results. The best way to dye the plates is to pour the filtered solution into a glass bath similar to that used for the wet-plate process. Lay the plate on the dipper, lower it into the solution, agitate it occasionally to prevent air-bells forming, and allow it to soak five minutes. Then withdraw and set up to dry in total darkness, same as with cyanine bathed plates.

Sensitising Formula.

Alizarine-blue - - - -	7½ gr.
Distilled water - - - -	80 oz.
Stronger aq. ammonia - - -	4 „
Silver nitrate solution 1 : 40 - -	135 drops.

Digitized by Google

Possibly a greater addition of ammonia will make them still more red-sensitive. I stopped at the above quantity.

In developing these plates, it is necessary to use some bromide of potassium to keep them clear. The following formula is one sent out by the Erythro Plate Co. with their red-sensitive plate, and works admirably with the alizarine dyed plate.

Developer.

No. 1.		No. 2.	
Water - - -	60 oz.	Water - - -	60 oz.
Sod. sulphite crys. -	8 „	Potassium carbonate	5 „
Eikonogen - -	5 dr.		
Hydroquinone -	5 „		

No. 3.	No. 4.
Saturated solution sodium sulphite crystals.	Ten per cent. solution bromide of potassium.

For use, take of No. 1, 4 oz.; No. 2, 1 oz.; No. 3, 1 oz.; No. 4, 2 drms. In cold weather heat to 70°.

Certainly, now, when red-sensitive plates can be obtained commercially, there is no necessity for bathing our own plates, but the occasion may arise when it will be of value to have a reliable formula; then try Alizarine Blue S. The cost of this dye compared with cyanine is as follows:—

1 lb. Alizarine Blue S. - - -	$1.00.
30 gr. cyanine - - - -	1.00.

In looking over the back numbers of *The Process Review*, I came across an inquiry from a reader, asking for information as to a method for rolling up or inking an *unetched* enamel print. Although the method given in reply to this inquiry answered the purpose, it can be accomplished in another way.

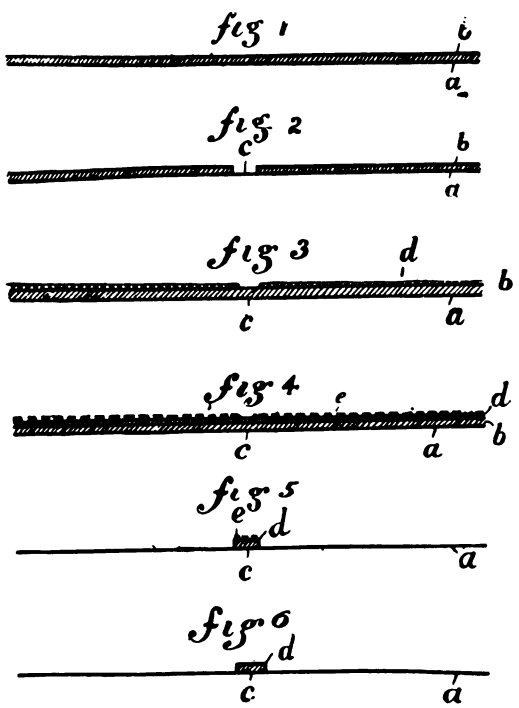
Some years ago I was engaged in making intaglio half-tone etchings on steel, and the necessity arose for inking the print to close up the high-lights after partially etching the plate, otherwise these small openings became too large and printed too black in the proof. (In the relief half-tone plate the opposite takes place.) To preserve the high-lights the etching had to be so short that there was not depth enough to successfully ink the plate by means of a roller. To overcome this difficulty, I made all my prints by the "dusting in" or "dry process," and after the plate was developed and burnt in, I removed all the loose powder from its face, and flowed it with ink dissolved in chloroform. After the solvent had evaporated, the print was developed in a tray of water acidulated with sulphuric acid. The plate was then etched slightly, dried, and dusted with powdered resin, heated until resin melted to fill up the small apertures of which the high-lights consisted, and then etched again until the proper depth for shadows was reached.

This method I afterwards modified by flowing the print with an inky solution of such a consistency that the high-lights would not develop when laid in acidulated water. Then after an etch of such a length as to nearly finish the plate, the ink was cleaned off and the final etch given. The ink solution is the same as used in the well known "blue process," where an albumen print is flowed with a blue ink solution, and after the solvent has evaporated, the print is developed in water the same as any other albumen ink method. This ink was of such a nature that without any other protection the first bite could be given.

Digitized by Google

ALLEGED IMPROVEMENTS IN PHOTOGRAPHY ON ALUMINIUM.

CERTAIN mixtures of bichromated colloids, in particular bichromated gum, are set forth in the French patent of M. Gisevius, of Bogdan, as part of a process for which novelty and superiority are claimed. M. Gisevius' process, as given by *Le Procédé*, is as follows:—The process belongs to those in which a sensitive film becomes insoluble in cold water on exposure to light, under a negative of the original subject. It is then washed in water, those parts of the sensitive film protected from light by the ground of the original subject being developed by inking, the film of sensitive material being afterwards removed, leaving only the layer of ink. Experience has shown that images of this kind, consisting of an ink to which is added pitch, resin, or other substance to give adherence, do not hold very firmly to the support, and indeed frequently become completely detached. Moreover, the plates bearing images of this kind of ink only are destroyed by the complete washing to which they must submit. It is found, also, that such processes cannot be carried out on aluminium plates, as this metal after contact with the first sensitive film does not "take," that is, does not retain the ink in spite of the disappearance of the sensitive film in the ground of the image on development.



In the present process the image on the plate is of a material which adheres very strongly to the plate, which does not come away during printing or during the washing of the plate; which takes printing ink well and gives an impression sharp and strong.

Compared with existing processes, the method gives much finer results on ordinary plates—*e.g.* zinc; and can, moreover, be applied to aluminium and thus permit all the advantages of lightness, resistance to acids, etc., of that metal. The process is for a printing plate on aluminium.

The well polished metal plate, *a*, is covered with a film, *b*, of gum-bichromate solution composed somewhat as follows:—

Water - - -	200 gm.,	7 oz.
Potass bichromate - -	7 „	108 gr.
Syrupy solution of gum arabic	40–50 „	1 oz. 180 gr. to 1 oz. 330 gr.

Digitized by Google

The coated plate is left in the dark room to dry (fig. 1). It is then placed in the printing frame, film to film with the negative, and after an exposure of three or four minutes placed in cold water and gently developed with a pledget of cotton-wool. Exposure to light has rendered the surface of the gum insoluble. The part, *c*, underneath the dark ground of the design, on the other hand, dissolves in water with the aid of the wool, and the excess of bichromate is washed out at the same time (fig. 2). The plate is then dried.

After this first treatment the bright metal appears in the parts corresponding to the ground of the design, whilst the parts formed of gum are greyish. The plate is then covered with a film, *d*, of albumen (albumen, a little potass bichromate and ammonia). It is dried again and exposed to light for a quarter of an hour in the printing frame (fig. 3). A film of albumen, insoluble in water, is formed over the plate.

A strong acid such as sulphuric acid does not attack the plate at the parts where it is in contact with the metal, that is, at *c*. On the other hand, this acid attacks at the places where it does not touch the metal, that is, where the film of gum comes between the metal and the albumen.

At this stage—that is, with the plate bearing the two films—a bath of acid is used. It does not actually attack the film of albumen at the places corresponding to the ground of the design, but confers upon it a certain repulsion of printing ink, although the albumen itself has a great affinity for printing ink. Hence we add a third substance to protect the albumen from the acid, but not to impede the action of the latter on the film. For this purpose a number of greasy or resinous inks can be used; for example, a lithographic printing ink, or a solution of asphalt or of other similar substance. The plate is given a film of the mixture, thin but dense in these substances, *e*, and it is again set to dry (fig. 4). If asphalt is used it is well to expose the plate again for a short time after application.

The plate is now treated with a solution of acid, about one part hydrochloric acid to two parts of water, being left in this mixture for about a minute. As soon as the acid, in spite of the two films of ink and albumen, enters the gum solution, the film can be easily removed by rubbing with the wool in pure water, whilst the ground, *c*, of the design, with its coating of ink remains sharply on the white ground of the metal plate (fig. 5). To the plate, with its surface thus cleaned, a coating of gum is applied with a sponge, the plate dried, and the layer of asphalt then removed with turpentine (fig. 6).

When the gum is dry the plate is washed in clean water, and is inked up in the usual manner and printed. The whole time involved in the preparation of a plate is about one hour.

A CORRESPONDENT in Adelaide, South Australia, sends *The Process Review* the following formula for a varnish to be flowed over finished wet plate negatives before drying:—

Ordinary good carpenter's glue - - -	1 oz.
Dissolve in hot water - - - - -	20 „
Add as a preservative-formalin - - -	1 „

This is recommended as being preferable to the usual gum arabic solution, which is the medium most common in America. It is understood, of course, that such water varnishes only apply where negatives are made through the prism and are not to be stripped from the original support.

Digitized by Google

A Budget of Specimens from the London Etching Co., of 3 Holborn Place, W.C., shows the jealousy with which this well known firm preserves its reputation for high-class half-tone.

The Annual Dinner of the Institute of Printers and Kindred Trades will be held at the Hotel Cecil on April 20th. A souvenir of the occasion will be published. The price of the dinner—to which, by the way, ladies are invited—is 7s. 6d., and application should be made to W. Hilton, St. Bride's Foundation, E.C.

Photo-Mechanical Overlays.—A recent demonstration of the De Vinne-Bierstadt mechanical overlay before the Printers' Managers and Overseers Association, and reported in *The British and Colonial Printer*, showed the remarkable results obtainable with this photo-mechanical aid to the printer. Technical particulars are supplied by the De Vinne-Bierstadt Co.

The German Phototypic Printers and their employees are reported to have lately concluded arrangements for a new scale, which came into force last month. The eight and a half hours' day has been granted, and the minimum salary during the first year following the four years' term of apprenticeship is to be £1 weekly, subsequently rising to at least 24s. There must not be more than one apprentice to every five journeymen. Overtime will be paid one-third extra, and Sunday work half extra.

A Simple Enamel Solution.—If you have never tried the following enamel solution (says *Camera Craft*), it will be profitable to you to give a little time to it. Some of the best workers in the country are using it. They claim that when properly understood it is as good as any. It is surely the most reliable, because containing so few ingredients which reduce slight errors of mixing and the varying condition of eggs to a minimum:—Process glue, 2 oz.; white of egg, 2 oz.; ammonium bichromate, 60 gr.; water, 2 oz.

British Enterprise and Collotype Machinery.—Our innocent little paragraph on page 46 of the last issue has brought quite a small shower of protests from indignant English printers, who are increasing their use of collotype machinery, and who seem to think that England is competing very well with the Continent, both in matter of quality and price. We shall certainly be very pleased whenever we can report that English orders are no longer sent abroad for collotype, and it would still further delight us to be able to say that British firms were securing large orders for delivery on the Continent.

An inquiry at the office of Furnival & Co. brings us the information that they are at present busier than ever before in the building of collotype machinery, and have at the moment ten machines in the course of construction, all orders for British printers. A letter on this matter appears on another page.

For cleaning Zinc, says *Klimsch's Anzeiger*, fat and grease are first removed with turpentine and benzole and the surface then thoroughly gone over with finest pumice powder, water, and a pad of fat. This mixture having been washed off, the metal is placed for ten minutes in a mixture of acetic acid 10 parts, and water 100 parts, or for five minutes in 5 per cent. sulphuric acid. The zinc is then fit for all kinds of lithographic or line work. On removal from the acid bath it is thoroughly washed, dried and rubbed over with turpentine, whereby it takes the ink more easily. Mistakes in drawing are removed with a stump and turpentine. Scraping must be avoided. The finished drawing is dusted with powdered talc and "etched" with a moderately strong nitric acid mixture, which is distributed uniformly with a soft brush. The plate is then rinsed with water, washed with pure turpentine and with water, stumped-up and inked by degrees with ink diluted with middle varnish. The drawing can then be dusted with asphalt, fixed, and the first etching proceeded with.

The Moore Light is another vacuum tube light, says *The Process Review*, which antedates the Cooper-Hewitt mercury vapor lamp, but which, unlike this latter lamp, obtains its light without any metallic mercury in the tube.

The Moore tube is about the size of one's wrist, and is said to contain some chemical which is the inventor's secret. The light is exceedingly soft, and glows a perfect white that in every way counterparts diffused daylight; and, most wonderful of all, renders *all* colors in their true value.

As arranged in the studio, the tube runs to and fro in a large box frame, several feet square, which is supported between uprights on a movable stand, with a device for tilting the box to any desired angle.

Portraits are made with all the qualities of perfect daylight with about the same length of exposure. The company are engaged at present in perfecting a form of the Moore lamp for photo-engraving purposes, which, if successful, will be a wonderful aid in color photography, and for such purpose will be without a rival.

Digitized by Google

For Wiping Photogravure Plates a band or strip of vegetable parchment paper has been patented by H. R. Macbeth-Raeburn, 53 Marloes Road, Kensington (English Patent 5,555, 1903). The parchment is arranged either as a continuous or endless band passing around suitable rollers or pulleys, or as a band which is unwound from one reel and wound up on another reel as required.

"After use it is cleaned in any suitable manner and then is used again. One method of cleaning is by passing the wiper through a vessel containing water and then between rollers to rub or press off the ink, thus leaving the wiper quite clean. The wiper may be used either wet or dry. In some cases the surplus ink pressed off the face of the die or plate by the wiper may be collected and used again; this advantage would be more fully secured if the wiper were used in a moist condition."

The Photo-Engravers' Union of New York.—The consolidation of Numbers One and Twenty-three (says *Process Review*) now numbers about 800 members, and is the strongest organisation of journeymen photo-engravers in the country.

The Union have taken new offices at 34 Park Row, corner of Beekman Strcet. These offices are large and commodious, and directly on the corner, so that the signs on the windows are visible from quite a distance. The desks and furnishings are in keeping with the surroundings, and a general air of business pervades the whole.

Teutonia Assembly Rooms, corner of 16th Street and Third Avenue, is the bi-monthly meeting place, and although a reasonably large hall, it is taxed to its capacity during the meetings.

Much enthusiasm is apparent in the new order of things, and much good for all members is anticipated.

Danger in the New Arc Light.—Now that the old style arc lamps used for photo-engraving show signs of displacement by a new kind that produces the ultra-violet rays, it behoves the process-worker to look out for his eyes. The new lamp is of the type known as the "enclosed arc" or "vacuum arc," and the light given off is apparently much weaker than the old kind. But its ultra-violet rays are the kind to which the photographic plate is most sensitive, and it consequently reduces exposure and saves energy. At the same time the engraver's eyes are more sensitive to its violet rays than to the old yellow kind. And herein lies the danger. He doesn't notice it at first, perhaps not until the damage is done. But the remedy is simple. Yellow glasses, such as are used to prevent snow-blindness, are all that are necessary to protect the photographer's eyes from injury, due to the ultra-violet rays. It is the ultra-violet rays in sunlight that burn the skin of the "summer girl" or the process man, but after continuing in the sunlight for some days, Nature furnishes a coat of tan, which is, after all, but a yellow filter to prevent the ultra-violet rays from injuring the skin. Let us take the hint from Nature and use tan-colored glasses to protect the eyes.—*Camera Craft.*

BRITISH *versus* CONTINENTAL COLLOTYPE.

DEAR SIRS AND MADAM,—I read with keen interest the short article in this month's *Process Photogram* in advocacy of collotype printing being taken up by British firms, and share the writer's regret that so much has to be done abroad. A short while back, customers of mine desired 2,000 post cards in collotype, and obtained specimen and price from a foreign firm with London address. Satisfied with the price, they then desired me to supply prints and arrange for the cards to be done. Anxious to keep the work in Great Britain if possible, I applied, without being urged to do so, to a Scotch firm, and also to a London firm. The one only undertook half-tone in color, and the price per thousand was reasonable enough; but the number required was not large enough for them, and they would take a long time to execute. The other firm would do the number, but asked twice as much as the other two. Doubling the price will hardly be put down to the difference in cost of production, and although the British collotype firm's work was somewhat finer than the foreigner's, it would take a trained and critical eye to detect this; but if you put one post card alongside another (as I did) and asked 1d. and 2d. respectively, the higher-priced card would prove very slowly-moving stock. It is useless crying out about bad trade when no attempt is made to do what is offered. I should add that the higher-priced firm were told to cut fine, or the foreigner would get it. The result was a blow to my patriotism in this matter, and the customer, refusing to pay 2d. for what he could get for 1d., the job had to go to the foreigner at his own price.—Yours faithfully, VIGORNIEUSIS.

Digitized by Google

No. 125.—May, 1904.

THE PROCESS PHOTOGRAM AND ILLUSTRATOR.

PRACTICE AND THEORY OF HALF-TONE ETCHING.

By E. Klimsch.

(Translated, by permission, from *Klimsch's Jahrbuch*, 1903.)

(*Continued from p.* 50.)

FIG. 1.—Under-printed: three minutes' etch.

CONSIDERING now in detail the process already outlined, we come first to the sensitising solution. This must not be used as soon as made, for the print then easily leaves the plate, and fog also is produced. It is ready for use after standing three days, and keeps for a month or less, according to the way in which it is stored. Old solutions give much diminished sensitiveness, and also exhibit the defects of new solution just mentioned. It need hardly be said that uneven preparation (streaks, air bells, coating of different thicknesses) must be avoided.

The print is primarily dependent on the character of the negative. Space does not permit me to deal with the proper preparation of a screen negative, but any half-tone worker must know what is meant by normal, hard and flat negatives, and also the

Digitized by Google

FIG. 2.—Normal printing: six minutes' etch.

means by which vigorous negatives are obtainable from flat originals and *vice versa*, methods which greatly aid the etcher in his work. It should further be pointed out that the kind of negative—dense and sharp-dotted, or flat and woolly—makes a great difference to the printer. In the first case, the negative "prints itself," so to speak, so long as one times the printing correctly. In the second case the printer has to hold back parts of the negative, to print in the sun or in shade, for a shorter or longer time, or in other ways to obtain a certain result. These adventitious methods increase the printer's difficulties, so that negatives of the latter kind are—without good reason perhaps — but little liked.

The time of printing has a **notable influence on negatives** in which the dots are not perfectly sharp. Take, for example, a negative in which are all tones from the highest light to the deepest shadow (figs. 1, 2, and 3). In fig. 1 we see the effect of too short printing. The shadows are grey, because they have come to a point on the print. Hence the plate will not stand a first etch of any length, and fine etching can scarcely be done, as the dots in the lights would fall away.

Fig. 2 shows the first etching of a normally printed plate which, despite its longer etching, is stronger in the shadows and generally is much better off for detail. A proper fine etching permits of the effect being easily intensified. Fig. 3, which is also from the same negative, shows the result of over-printing. The shadows are blocked and the lights are all strongly veiled, so that even fine etching will not give a useful result. The part played by the dot in the production of the image is discussed in another part of this *Jahrbuch*; as it belongs properly to negative-making, we shall not consider it here.

A copper half-tone is scarcely ever made at a single etching. The reason for this is that only the surface of the dot is covered by the enamel resist, and hence after the first etch the sides of the dots are attacked by the etching fluid. This brings about a general reduction of the total area of dot, so that, while in the etching bath, a continuous lightening of the whole image is bound to take place. In the case of originals with not very deep shadows, the necessary printing strength may frequently be obtained in one etching by making a correspondingly darker print. But with prints of deep and modulated shadows this is not possible, as the fine white spaces which must be already in the shadows would be greatly over-etched. An exception to this general rule is found in prints from negatives with the dots as a whole

Digitized by Google

not sharply defined and almost grey in the shadows. In this case the print can be made with a very fine skin of enamel in the shadow spaces. This film withstands the etching bath for a short time, but then breaks up. The after-etching in the shadows is sufficient, however, to give the necessary printing strength in the high-lights without harming the shadows. Such a method, however, is not to be regarded as a safe one, as it cannot be seen whether the necessary film of enamel is over the shadows or not. If it is absent, no great amount of etching can be done. If it is present, it is still well, in order to be sure that the shadows remain open, to remove the plate after it has been a couple of minutes in the bath, dry it, and rub in magnesia, when it can be seen if the tones are right. If there are any blocked-up portions, they are rubbed with 5 per cent. hydrochloric acid on a bit of wash-leather and thus become more readily acted upon by the etching bath. If this is not done, the shadows will be sooty, as in figs. 3 and 4. To obviate unequal etching, the hydrochloric acid treatment can be applied before etching and repeated after etching if necessary.

FIG. 3.—Over-printed: six minutes' etch.

In fig. 4 the reader can see irregular dark lines which are caused by not rinsing the plate, after development and staining, with sufficient care. Instead of seeing that the washings all run off and drying the plate at once, it is left standing and the adhering water runs into drops. The slight quantity of lime, etc., dissolved in the water collects at the edge of the drop as it dries, with the result that on burning-in, a resisting film is formed over the open dots and the action of the etching bath is obstructed.

Passing now from the few cases in which printing strength can be obtained at a single etch, we may state the rule that the first etch should be long enough to give the shadows their proper printing strength. If it is seen from the proofs, in spite of sufficient etching of the shadows, that the latter are still too dark compared with the original, the plates can be taken further in the bath until they are sufficiently lightened. If, on the other hand, they are lighter than in the original, the etching has obviously been too long, since the proper printing strength must be obtained in all cases. The shadows will thus have to be afterwards burnished in order to remedy this error.

The manner in which the preliminary etching is done is not without influence on the character of the block. If the plate undergoes a quiet etching, the result is quite different from that in which the etching bath is kept in active movement or brushed over the plate. In the former case the side-

Digitized by Google

way action of the bath compared with its perpendicular action is much less than in the latter. For the movement of the bath or the application by brushing favors the etching of the open dots far more than that of the closed parts of the plate, as the first exposes many more points of attack than the latter. Through this intensified side-action a brighter effect is given to all the tones, the etch taking place more slowly in the shadows and more quickly in the high-lights. Figs. 5 and 6, from one and the same negative,

FIG. 4.—Sooty Shadows.

plainly show the difference in the two methods, particularly in the sky. It will be noticed that the etching takes place much more rapidly when aided by movement or brush.

(*To be continued.*)

Nigrography.—A test for the suitability of paper to be used in the gum-chromate process of Itterheim* is given by E. Valenta in *Photographische Korrespondenz*, January, 1904. The paper, he points out, must be smooth and well sized in order that the lights shall not retain the soluble gum and chromate, and also that the insolubilised gum-chromate may be readily removed in the acid bath. To test the paper, some lines are ruled on it with the mixture of shellac and lampblack to be used in the process itself, these being applied with a pen or a fine brush. When they are dry the paper is placed in dilute hydrochloric acid (1 in 50), and left there for some hours. If the strokes are easily removed on rinsing in a stream of water, or gently treating with a soft wet brush, the paper is unsuitable. As a test for the proper sizing of the paper a double cross

is drawn on the paper with a pen and a brilliant ink such as Chemnitz violet copying ink, and left to dry. No signs of the cross should be visible on the back of the paper, and the edges of the lines should be quite sharp. If a smooth paper withstands both tests it is usually well suited to the process.

* *Ferric and Heliographic Processes*, p. 92.

Digitized by Google

FIG. 5.—Etching without agitation, fourteen minutes: flat effect.

FIG. 6.—Etching with bath moving and by aid of brush, six minutes: increased contrasts.

Digitized by Google

A NEW COLLODION EMULSION.

By Baron von Hübl.

(Translated from *Das Atelier des Photographens.*)

ORTHOCHROMATISING THE EMULSION.

(*Concluded from page* 57.)

To render collodion emulsion sensitive to yellow and red, the ethyl violet of the Badische Aniline and Sodafabrik may be used. It is ideal for the purpose, as it exercises no bad influence on the keeping properties of the emulsion or on its special characteristics, and gives a sensitiveness in the orange which is at least equal to that in the blue. The dyeing of the emulsion doubles its general sensitiveness, and a plate treated in this way has four times the rapidity of a wet plate. This greater sensitiveness is produced as soon as the plate bearing the dyed emulsion is bathed in water,* and disappears for the most part when the plate is placed in the developer, a fact which is favorable to comfortable working in the dark room. Ethyl violet is far superior to the older cyanin, which is uncertain in its action.

The bathing of the plate before exposure in a dilute silver nitrate solution in no way produces increased red sensitiveness, and need not therefore be considered. For sensitising to the yellow-green eosin is used in conjunction with a silver salt. Eosin without silver is practically without action on a gelatino-bromide emulsion. It behaves better on a chlor-brom emulsion, but not so actively as ethyl-violet. In sensitising with eosin the plate must be given a bath of water before exposure, and then exhibits a sensitiveness to the yellow-green about half that in the blue. Let it be noted that the commercial eosin is frequently unsuitable for this sensitising *minus* silver. The chemically pure dye or the tetrabromofluorescein, which is easily made from commercial eosin, should be used.† Eosin helps the clear working of the emulsion and tends to produce clear brilliant negatives. The dye is especially sensitive in the yellow-green, less in the pure green, and without action in the blue-green. Therefore a greenish-yellow taken through a yellow or green filter is rendered very bright, whilst bluish-green is almost without action, and is reproduced too dark. A plate coated with the eosin collodion when bathed in a 1 in 1,000 silver nitrate solution has its sensitiveness in the yellow-green doubled, and its blue sensitiveness raised in about the same proportion. The sensitisers and dye solutions of Dr. Albert may be used for this purpose, consisting as they do of silver eosin preparations. But they possess the above-mentioned drawbacks associated with silver sensitising.

Rhodamin can be used in place of eosin. It gives very clear strong negatives, and sensitises especially for the yellow rays. Rhodamin emulsion thus renders orange, *e.g.* cinnabar, relatively light, but bluish-green still darker than eosin. The dye-stuff is worth notice for work with paintings, etc., and is preferable to eosin, which reproduces cinnabar as black.

Excellent sensitisers occur in the cyanine groups of dyes. Many bodies under this class have long been known, but not much made, as, with the exception of the dye briefly known as cyanin, they are very little used. Some time ago Dr. Miethe prepared a new series of cyanins and showed their great practical value as sensitisers. A further number of dyes have been prepared by Dr. Konig, the principal of which is Orthochrom T.

* But the stain of the dye must be washed out if greatest speed is required.—EDS., *Process Photogram.*

† The best dye, in our experience, is "Eosin 3G" of Meister, Lucius & Brüning, who say it is *di*brom fluorescein.—EDS.

Digitized by Google

Ordinary cyanin is an extremely strong sensitiser for the red. The emulsion, however, keeps very badly and the plates readily fog, and the dye is well replaced by ethyl violet. A cyanin recommended by Dr. Miethe for collodion plates, under the name of ethyl red, renders the emulsions highly sensitive to orange yellow and green, doubling the rapidity of the emulsion without producing any tendency to fog. Similarly Orthochrom T is a dye, the action of which extends further into the red. It has proved itself excellent for gelatine plates, but in collodion emulsion shows a tendency towards fog, and only by adding potassium bromide to the developer can one get perfectly clear negatives.*

As a red sensitiser for collodion emulsion ethyl violet cannot be beaten, though we still lack a dye which will give a complete sensitiveness for the pure green and for the blue-green. Even ethyl red is not perfect in this respect, as its band of sensitiveness reaches only to the blue-green, whilst the sensitiveness of the mother emulsion extends into the pure blue. This defect appears to be avoided only by the purple red cyanin prepared by Dr. Konig and consisting of paratoluchinaldinchinolinmethylcyanin.† The sensitising action of this dye commences in the orange, extending into the yellow and green up to the blue-green. It gives completely clear, strong negatives and is as good a sensitiser for the green as ethyl violet for the red. By using these two dyes in suitable proportions an emulsion is obtained which without a filter reproduces all pigment colors of great purity and brilliancy, so that one can almost call it "isochromatic." The emulsion is five times as rapid as a wet collodion plate.

Lastly, we may say a few words as to the use of mixtures of the above substances in orthrochromatising. Mixed sensitisers should usually be avoided. The separate components scarcely ever have an accumulative action, the activity of one constituent being almost always depressed by the others. For this reason eosin is ineffectual mixed with ethyl violet. The strong red sensitiser leaves the eosin very little action if it is present in appreciable excess, and one gets plates which are certainly sensitive to red and green, but the former is only a fraction of that which one obtains when ethyl violet is used alone. Moreover, the two dye stuffs appear to react chemically unfavorably upon each other—the acid eosin on the ethyl violet.‡

Dyes of about the same activity and chemical characteristics may be used together, though a careful adjustment of their quantities is necessary if they are not to prejudicially affect each other. A distinct advantage of the new cyanine dyes consists in the fact that they sensitise for a considerable region of the spectrum, and, therefore, enable the photographer to dispense with dye mixtures. They can be added to ethyl violet with good results as regards red sensitiveness.

The coating of the glass plates with gelatine or rubber solution is not necessary, and it is sufficient if the plate is rubbed with a bit of quartz round the edges or given a narrow edging of rubber solution. The dye solution is added to the emulsion, the preparation being so made that scarcely any alteration takes place even after long storage. The following are the dye solutions:—

(1) For yellow-green sensitising 25 c.c. (420 minims) of 1 in 50 eosin solution, or 15 c.c. (250 minims) of rhodamin solution 1 in 50 are added to 1,000 c.c. (35 oz.) of emulsion.

* We understand that Dr. König has just prepared a new dye, "Pinachrome," which has all the good qualities of Orthochrom T, but sensitises further into the red and increases the rapidity still more than Orthochrom T.—EDS.

† Orthochrom T is probably here referred to.—EDS.

‡ The two dyes here named do not, in our experience, neutralise each other to the extent which the above passage suggests.—EDS.

Digitized by Google

(2) For red sensitising 10 c.c. (170 minims) of 1 in 500 ethyl violet solution are added.

(3) For orange-yellow and green sensitising 40 c.c. (1 oz., 200 minims) of 1 in 500 ethyl red solution, or 40 c.c. of toluchinaldinchinolinmethylcyanin * solution, 1 in 1,000, is used.

(4) For sensitising uniformly with all colors a mixture is made of 30 c.c. (1 oz., 20 minims) toluchinaldinchinolinmethylcyanin * solution, 1 in 500 and 5 c.c. (85 minims) 1 in 500 ethyl violet solution.

The coated plate is bathed in a dish of water until the greasy-looking markings disappear, or rinsed under a tap until the film takes the water evenly. During treatment with water the color sensitiveness appreciably increases, and, therefore, until the plate is safely in the dark slide the greatest care should be taken as regards illumination of the dark room. For orthochromatic exposures on oil paintings, water colors, etc., the emulsion is sensitised with eosin or rhodamin, dyes which permit the ordinary illumination of the dark room to be employed. If, however, the picture contains much red or brown, ethyl red or toluchinaldinchinolinmethylcyanin must be used, and then the development of large sizes is a matter of some little trouble. If a brilliant purple occurs with a dull yellow, the red sensitiveness must be increased with ethyl violet. In this case it is worth while to depress the sensitiveness of the plate by making a small addition of bichromate. If bright blue come out too dark, a bright yellow filter of picric acid or potassium monochromate (K_2CrO_4), or a tartrazin filter, must be used.

In tri-color work all three exposures may be taken on an emulsion sensitised with No. 4, using a violet-green and orange filter respectively, or the undyed emulsion, without a filter,† can be used for the yellow printing negative; the eosin emulsion with a yellow filter, or the toluchinaldinchinolinmethylcyanin emulsion with a green filter, for the red printing negative; or ethyl violet with an orange filter for the blue printing negative. The relative times of exposure for these three combinations are 1:2:1. The filters are prepared from any of the numerous formulæ and adjusted by photographing the color chart. The eosin plate has the advantage that the color filter for it can be made very light. In adjusting the latter, note must be taken how the blue of the color chart shows its proper strength in the negative. If one, however, uses a red sensitive plate, blue and green rays must be cut out by the filter, and the adjustment is not so easily made. Eosin sensitised plates are defective, as already mentioned, in blue sensitiveness, and for this reason the green in the red printing negative is frequently not strong enough. If the negative is intended for making transparencies the defect is not of importance, as a vivid blue-green can be chosen for the blue monochrome.

In making the exposures for tri-color work, sensitising with toluchinaldinchinolinmethylcyanin, the best of the green sensitisers, is to be preferred.

After exposure the plates are developed, without rinsing them, in glycin, which is best made from the well known paste diluted with 15 parts of water. Addition of bromide is uneccessary so long as the temperature remains below 65° F.

* Better with plain glass or a water filter.—Eds.

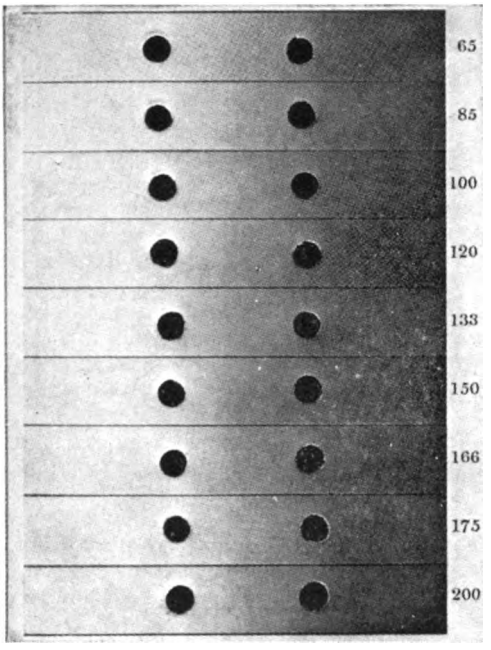
† Apparently Orthochrom T.

Digitized by Google

DETERMINING HALF-TONE LINEATURE.

In a recent issue of *The Printing Art* was published a scale by the Suffolk Engraving and Electrotyping Company, Boston, the object of which is thus explained:—

"The use of half-tone screens of varying fineness has made process engraving available for a wide range of work. The accompanying scale shows a range of screens employed, from the coarsest newspaper work to fine book and magazine illustration. Plates made on a 100 or 120-line screen are especially desirable in catalogue work where it is necessary to electrotype for the duplication of formes. The 150-line screen is probably the most largely used, while the 175-line screen gives soft effects in vignetting.



"With a 200-line screen very beautiful plates are produced, but they cannot be electrotyped to advantage, nor printed in large formes with type matter. Half-tone plates have been made on a 400-line screen, but such plates can be printed only in small formes, under the very best conditions."

Happening to show the scale to Mr. Alfred J. Newton, the Principal of the Bolt Court School, he produced a pocket scale used by himself, and doubtless by many in the trade, for the same purpose. It consisted simply of small portions of proof from half-tone blocks of known lineature, with a small aperture cut into the proof, pasted with the face in contact with a bit of thin glass, so that on laying the scale over any matter of which it is desired to ascertain the lineature, both shadow and high-lights can at once be compared. The Suffolk Engraving Co.'s scale is wider in range, and it at once presented itself to Mr. Newton as the basis of a finer and more useful test scale. The copy herewith printed shows the method of piercing as indicated by the discs, and mounted on glass. The original would then form a remarkably delicate test for the ruling of any half-tone printed matter.

On Weighing Chemicals, a useful hint is given by *Camera Craft*, which suggests the making of a set of weights for each formula in frequent use:—"When a set of weights is made the work is done for 'once and all.' For instance, you are going to mix collodion. Go to the composing room and get a few leads and slugs; then get out your weight for whatever you want. If you are using 52 grains of cadmium iodide, put your weights in the scale and balance them with a piece of the lead. By clipping off the lead with a pair of scissors and finally rubbing on a file, it can be balanced to half a grain. Mark this 'cadmium iodide,' then get out a piece for each of the other ingredients and mark them plainly by scratching into the metal. After this there is no more calculating. It is only necessary to put your piece of lead in the scale and pour out enough chemical to balance it."

Digitized by Google

MODIFIED COLLOTYPE FOR BEGINNERS.

By Henry G. M. Barstow.

(*Concluded from p.* 53.)

A Few Hints.

Papers.—One of the immense advantages of this method of working is that any kind of paper may be used, and consequently the variety of effects obtainable are limitless. If you desire the prints to look like photographic prints you can employ an enamelled and tinted paper, and choose an ink which resembles one of the photographic tones. Prints produced in this way and subsequently burnished, are almost undistinguishable from prints on P.O.P. But in my opinion the great charm of the method is that the appearance of a photographic print can be easily avoided, by using various kinds of drawing paper of different degrees of smoothness, from the rough or tinted water-color papers to the finest ivory surface; silk, satin, or other materials also give excellent results. The very rough granular surface of some drawing papers, although giving most artistic pictures, have the disadvantage of requiring considerably more pressure in the press to get the ink well into the granulated surface; moreover, the grain of the paper becomes impressed upon the surfaee of the plate, which necessitates re-damping after every pull; also by using such a paper the number of pulls that can be made from a single plate becomes naturally limited, as the rough surface quickly impairs the plate.

Using a smooth drawing paper (H.P.) I have myself taken as many as seventy-five good prints from the same plate, not counting waste pulls—but this is far above the average number, from three to four dozen copies being quite as many as can reasonably be expected from one plate: of course, if very many copies of a particular subject are required, it is easy enough to make two or more plates from the same negative.

The prints are absolutely permanent, provided that the color used is not a fugitive one. Nearly all the blacks, browns, reds, and blue blacks are quite permanent; the more fancy colors, as rose, transparent yellows and greens, are neither effective nor permanent, and may as well be left severely alone.

If you have been using a mask to protect the margins, your prints are now complete except for spotting and so on; but if you have merely used the paper direct upon the plate, the print will require trimming to size, and you will see that the varnished edges of the plate impress an irregular border which must be cut away. The most convenient and quickest method is to put the prints six or eight at a time under any good guillotine cutter, and they are easily trimmed in batches.

The richness of the impressions is much enhanced if after the prints are perfectly dry (that is to say, not less than a couple of hours after they were pulled in the press, so as to allow the paint, as it were, to set thoroughly) you take a square of "Selvyt," and holding the print firmly upon a table or board, polish the surface with it, together with a little—very little—French chalk. If there happen to be any black spots on the print, the result of pinholes either in the negative (which, however, should have been properly retouched) or in the plate, they may be removed immediately after printing, before the ink has had time to dry, by the use of a little putty rubber (which

Digitized by Google

can be had at any artists' colorman), and which can be screwed up between the fingers, as it is plastic stuff, into a fine point. This will remove the paint without any difficulty, while it is still wet; but after the printing ink is quite dry, it is almost useless to attempt such treatment. In that case the point of a knife or retouching scratcher will sometimes pick the ink off, if carefully handled; but this is laborious, and there is always the risk of digging holes in the paper. When the prints are really quite set, nothing on earth will remove the paint, and blacks cannot be got rid of. White spots occur on the prints, caused by little specks of dust being either on the plate at the time of printing or in the ink. They are easily touched out by "spotting," but if the slabs are carefully watched, and rag which does not shed fluff be used for dabbing up the moisture from the plates, white spots will seldom occur.

"Spotting" can be done, as well as working upon the prints, by using the same printing ink which has been employed for the impressions, thinned with a little turpentine. Thus the color is easily matched, a fine water-color brush being used. Any amount of work that you think fit can be done on the prints by "stippling" into them, and a whole wash of color can be applied to parts that are too white for artistic effect, and that you may wish to "kill" or soften.

If the prints are subsequently put through a burnisher it greatly improves the depth of the color, but of course this cannot be done if the surface is to be kept "matt," which in many cases is the more artistic. The prints are easy to mount in the ordinary way; they may be damped or not as you prefer; water has no effect upon them whatever, but they have the great advantage over photographic prints that they remain flat from first to last and do not curl.

Prints may be sized and varnished. To size, merely wash over or dip them into a weak solution of gelatine and water, which must be sufficiently warmed to melt the gelatine, but should not be hot. You may roll the prints a second time after they are mounted.

A suitable varnish can be made by pounding up white lac (shellac) and dissolving the same in naphtha or methylated spirit—about one part white lac (powdered fine) to three parts of spirit. It takes a long time to dissolve, and should be shaken and stirred occasionally. When the spirit has taken up all or as much of the lac as it will, filter it, and take a third of the mixture, adding two thirds boiling water and a few drops of ammonia; when cool, the prints may be floated in this mixture for a few minutes and then dried, by the aid of a very little gentle heat. If the prints are on smooth paper and are polished with a little French chalk and passed through the burnisher, they will be found to have quite as much gloss as is desirable.

Having endeavored to explain in the simplest and most direct way possible the whole of this system of printing, I hope that as many of my readers as care to try will have their efforts rewarded by complete success, and may the process be found by them as interesting and amusing as I have found it myself. For producing copies in relatively small numbers from all kinds of negatives, including copies of drawings or paintings, it will be found both convenient and profitable.

Digitized by Google

SENSITISING COLLODION EMULSION FOR TRI-COLOR WORK.

THE translation of the paper by Baron von Hübl, concluded on another page, will probably be studied by everyone occupied in using collodion emulsion for color work; no less so the following account of Herr E. Valenta's tests published in a recent issue of *Photographische Korrespondenz*. Valenta says:—Ethyl violet, first recommended by me as a red sensitiser of collodion emulsion, has been proved the best dye for this purpose in the course of the extensive use made of it in the Vienna Institute of Graphic Arts. When care is taken to rinse the bathed plates before exposure until all streaks disappear, it gives clear negatives of good density. In the Vienna School, exposures through the yellow or green filter are made at present with emulsion dyed with sodium monobromfluoresceïn, whilst the usual wet collodion plate is used for the yellow printing plate. These dyes, as has been already stated, are added to the emulsion. The raw emulsion is that of Dr. Albert of Munich, and known as "Eos." Dyes are issued by Albert for the dyeing of the emulsion, such dyes being hitherto added to the emulsion before coating. Recently, however, a series of dye solutions has been issued by Albert, not for dyeing the liquid emulsion, but for application to the coated plates. The plates thus color-sensitised are rinsed with water until all signs of streakiness disappear, and are then exposed. The solutions supplied for this purpose are sold as A A, R R, G G and S S, and have been subjected to comparative tests alongside the sensitisers used by us.

The dye R R, intended for the blue-printing plate (red filter) is a red-violet solution with a yellow-green fluorescence. The dye A A (red printing —green filter) is a red dye of the eosin group. G G is a yellow dye solution without fluorescence and to be used for the violet filter (yellow printing), whilst S S, to be exposed behind a bright yellow filter (black printing in four-color), is a violet solution resembling the preparation R R.

All the solutions smell of ether and turn blue a piece of red litmus paper held above them: they contain ammonia, which is further recognisable by its characteristic odor. In the experiments undertaken to ascertain the sensitising properties of these preparations the directions for use with Albert's emulsion were followed: the coated plates were flowed with the dye solutions diluted with nine times their volume of 90 per cent. alcohol, and further treated as already mentioned.

The sensitised plates were exposed in the Steinheil Spectrograph, so often used in my experiments, to the light of a Siemens' burner, the spectrum being photographed with exposures of 5, 10, 15, 30 and 60 secs. on each plate.

Under these circumstances the dyes A A, R R and S S gave strong sensitive bands, whilst G G showed no action; this dye stuff requires far longer exposures.

In using A A a strong band was obtained at the shortest exposure (5 secs.); it reached from $D\frac{1}{5}E$–E with a maximum at $D\frac{1}{2}E$. On the longest exposure of 60 secs. the band stretched from D–F.

The dye R R gave a scarcely observable narrow band at the shortest exposure with a maximum at $C\frac{1}{2}D$. On longer exposure (60 secs.) the band extended from C to D. The action of this dye is one-tenth that of A A.

Digitized by Google

S S gave the band of A A in addition to that of R R. The red band was somewhat stronger than that obtained with R R.

The plates worked uniformly clear. Comparing the dye R R with ethyl violet, used for the same purpose in the Vienna School, it is seen that clearer negatives are obtained, and that the sensitiveness conferred by the ethyl violet is from twice to three times that of the R R. The ethyl violet was applied in a solution made by adding 1 part of a 10 per cent. alcoholic solution of the dye to 5000 of the emulsion, coating, allowing to set, washing until greasy streaks are no longer observable, and then exposing. The ethyl violet sensitises further into the red, and gives greater density than the R R. A further attempt was made to use the alcoholic solution of the dye in the manner recommended by Albert for his dye solutions. This likewise gave better results than the R R, using a concentration of 1 part of dye in 12,000 parts of 90 per cent. alcohol.

The plates work clear and show great sensitiveness. More concentrated solutions give still clearer negatives, but the sensitiveness of the emulsion then suffers, apparently from the screen-like action of the blue-dyed collodion film.

The same result was obtained by Herr Tschörner in the studio of the school, the dyes in question being submitted to comparative practical tests. Ethyl violet, used in one or other of the two ways, is thus seen to be superior to the R R dye for the blue printing plate.

As regards the dye A A intended for exposure behind the green filter, no advantage could be found for it over the monobromfluoresceïn advised by Eder. The sensitiveness of the plates sensitised with this latter dye in the usual way is a very high one, and there is no waste to be feared in case the whole of the dyed emulsion be not used up, as emulsion containing monobromfluoresceïn keeps very well.

To this notice of ethyl violet for collodion emulsion Valenta adds some notes on the dye as a sensitiser of gelatino-bromide dry plates:—Some years ago, he says, I made experiments on the color-sensitising of gelatino-bromide plates with ethyl violet. The results were practicable, but the action was far less marked than in the case of collodion emulsion. The cause of the results was the unfavorable concentration of the dye-baths then chosen.

As ethyl-violet dyes silver bromide extremely easily, I afterwards tried the use of highly-diluted dye-baths for dry plates. Clear working plates of satisfactory red and yellow sensitiveness were obtained by such greatly diluted baths, containing a very small proportion of ammonia; the time of bathing being rather longer (three to four minutes). With dilutions of 1 in 250,000 and more, one obtained plates giving on short exposure a strong band from C–D, with a maximum at C$\frac{1}{3}$–D. On longer exposure a second fainter band was obtained in the yellow-green which joined the first at D, and possessed an indistinct maximum at D$\frac{1}{3}$–E.

My experiments were directed to intensifying the action of the ethyl violet in the yellow and yellow-green and to render harmless the minimum *Eb*, which appears only on short exposures.

As ethyl violet possesses one good property which most red sensitisers lack, *i.e.* of combining with fluorescent dyes without depreciation of its sensitising action, this desired purpose was attained by combining the ethyl violet with erythrosin-silver and monobromfluoresceïn, and it is possible in this way to obtain almost panchromatic plates. The following formula has given good results:—Ethyl violet sol. (1 : 5000), 100 parts; silver erythroside sol. (1 : 500), 20 parts; monobromfluoresceïn sol. (1 : 500), 30 parts.

Of this solution 15 parts are diluted with 500 parts distilled water and 2 parts of ammonia added.

Digitized by Google

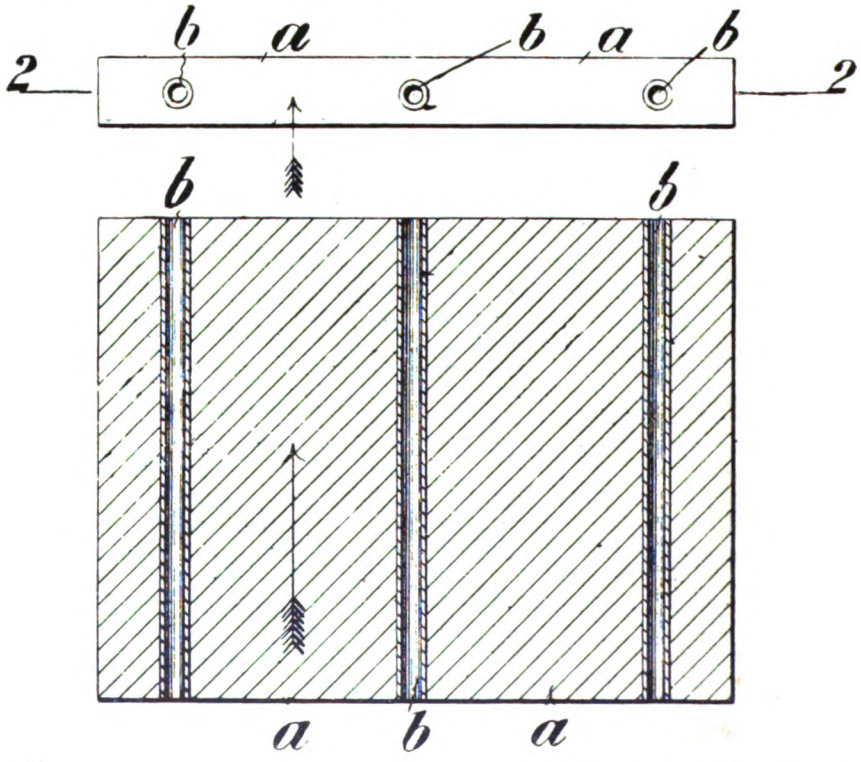
The plates are bathed (with exclusion of all light) for three minutes in this solution, are rinsed in a second highly-diluted solution of the same kind, and then dried at a moderate heat.

Further experiments on the preparation of panchromatic plates, by combination of ethyl violet with other dyes, have been suspended, because in the meantime such excellent dyes have appeared in commerce, especially Pinachrom of Meister, Lucius & Brüning, which, while conferring great sensitiveness in the orange, green and yellow, are able to avoid the minimum *Eb*, and are therefore well suited for "panchromatic" sensitisers.

Current Topics

Mounting Half-tone Blocks.—For preventing the warping of blocks a method has been patented by C. F. M. Norman of Graphic Works, Tunbridge Wells, in which holes are drilled across the grain of the wood and steel rods forced into these holes. As shown and described in the patent specification (No. 270, 1903) "the block or slab *a* is provided with a number of holes drilled across the grain of the wood and parallel to the surface thereof, and into these holes are forced tubes *b*, the holes being preferably made large enough to allow the tubes to be forced in by hand or by a light tap of the hammer so that the tubes fit comparatively easily, and this permits the wood to expand and shrink in both the directions indicated by the arrows in figs. 1 and 2 without warping or cracking.

"A suitable diameter of tube or rod for stiffening a block, board or slab of, say, $\frac{1}{4}$ths of an inch in thickness, is, say, $\frac{3}{8}$ths, but if thinner boards or slabs are used the tubes or rods may be correspondingly thinner. Similarly, if required for thicker boards or slab, the tubes or rods may be correspondingly thicker."



Digitized by Google

A new Rotary machine for aluminium printing is now being largely turned out from Messrs. Furnival's factory at Reddish. *The Lithographic Gazette*, to which we are indebted for a technical description (which we find sandwiched among many other matters of interest and importance to the litho craft), speaks of the machine as one that is capable of producing the highest class of work at the greatest possible speed.

Koenig & Bauer have issued a reproduction of an oil painting of Friedrich Kœnig, the founder of the firm. The reproduction, which has been executed in five printings by Mr. W. Büxenstein of Berlin, was printed on the High Art Press "E" type, No. X., and is a remarkably fine piece of printing. Information regarding this special machine will be readily given by Messrs. Hunters, Ltd., Poppin's Court, Fleet Street, E.C., the agents of Messrs. Koenig & Bauer.

A Patent for color-sensitive collodion emulsion has been taken out by the Franklin Tarsulat, Buda Pest (English Patent 14,073, 1903), the claim being for a permanent emulsion made as follows:—"The collodion emulsions are treated with diiodo fluoresceïn, which is either used exclusively or in combination with one or several other dye-stuffs, or in combination, directly or indirectly, with sensitive salts or solutions. The collodion emulsion thus treated can be combined, if desired, either during its preparation or afterwards, with the corresponding dye-stuffs which are free from silver for increasing the sensitiveness for blue, green or red rays. This treatment of the collodion emulsion prevents the decomposition of the emulsion, and assures continuous sensitiveness to light."

The English Edition of Baron von Hübl's *Color Photography* reaches us from Messrs. Penrose just as we go to press. We may quote a part of the contents, pending a review in the usual course next month:—Colored Light. Mixed Light. Theory of Color Sensation. Body Colors and Dyes. Mixing of Colors. Geometrical Representations of Color Mixtures. Choice of Colors. Relation of Printing Color and Light Filter. Sensitising of Plates and the Light Filters.—Absorption and Sensitising. Screening Effects. Sensitising for Blue-Green, Green, Yellow and Red. Mixed Sensitisers. Liquid and Dry Filters.—Characteristics of the most important Filter Dyes. The Production of Gelatine Dry Filters. Making the Negative.—Collodion and Gelatine Plates. The Use of the Color Scale and Grey Scale. Recipes for Sensitising of Plates and Making of Filters. The Production of Gelatine, Celluloid and Mica Transparencies. Three-Color Printing.—Selection of Printing Inks. Typographic, Lithographic and Collotype Printing.

Sheffield Printing and Kindred Trades' Federation.—A special lecture on "Recent Developments in Lithography and New Processes of Reproduction in the Graphic Arts" was delivered on February 24th in the Crofts Council Schools, Sheffield, by Mr. Jas. Goodman, Silver and Bronze Medallist of the City and Guilds of London Institute, and Technical Teacher in Lithography and Photo-mechanical Processes at the Liverpool Municipal Technical School. The lecture was fully illustrated by a series of lantern slides, and there was an interesting exhibit of "Collotype," "Photogravure," "Photo-Aquatint," "Photo Litho," "Photo Stone," "Orloff," "Chromo Lithography," etc., and other specimens of high-class work in the various stages of production, many of which were the work of the students in the Liverpool Technical School. Great interest was taken in the proceedings by all branches of the trade; one employer who was unavoidably prevented from attending sent an expert member of his clerical staff to take a verbatim shorthand report of the address for his perusal. The lecturer reminded them that they were the seventh city in Great Britain in point of population, but they did not occupy that category so far as the printing world was concerned—Bradford, a smaller sister city, being as far ahead of them as a printing centre as Sheffield was pre-eminent in the manufacture of steel; and to carry the comparison still further, they occupied an inferior position in the "art preservative of all arts" compared with other towns of far less significance, and with other cities of this country and the Continent. Was it wise of them to put all their money in one bank? He said it had been urged that Englishmen could not produce the higher classes of work that was being done abroad, but he had been at much trouble to disprove that, as the specimens exhibited there that night for review would maintain; he had himself worked in different parts of the Continent, and had since shown that his students could do fully as good work under an equality of conditions, and by Continental methods. We had to continually modify our knowledge, unlearn old ideas, and to overcome our inordinate insular prejudices, as it was not a pleasurable reflection to remember that the most striking and epoch-making scientific developments and industrial inventions appertaining to the printing craft preponderated from foreign countries. The lecturer then proceeded to give an able exposition of the growth, development and present position of the litho art, and of the processes allied to it of more recent discovery. He laid stress upon the position now occupied by photography in the printing world, and said that wonderful as had been the progress made in this department it was but yet in its infancy. No one could yet fully foresee the ultimate outcome of the utilisation of photography for the purposes of illustrative printing. He also pointed out the revolution effected by the metal aluminium during the fourteen years of its application, and of the possibilities of further conquests. He submitted that Mr.

Digitized by Google

Mesely would have secured a more real and permanent benefit to British industry if he had selected for his foreign tours technical students and experts of the printing craft who had direct practical workshop experience of the trade to-day, and not those who for years had been divorced from the practical manipulations, and were entirely out of touch with present day methods.

A hearty vote of thanks was accorded to Mr. Goodman for his most instructive and interesting lecture.

Bichromate Poisoning.—"As there is a hidden danger of becoming poisoned by absorption of bichromate, it may not be out of place to point out the symptoms, their prevention and cure.

"It does not matter whether the sensitising salt is bichromate of potash, bichromate of ammonium, or bichromate of soda," writes A. S. Jarman in *Wilson's Magazine*, "the poisonous element being the chromic acid which is in combination with the alkaline base. Poisoning by absorption is very different in its action from taking a bichromate solution internally, but in every case the symptoms are the same in the early stage. The mere washing of the hands in water, or allowing plenty of water to flow over the hands, does not prevent such a powerful poison from being absorbed by the pores of the skin, producing in some cases an almost total loss of the faculties, and in some cases blindness.

"The earliest symptoms are itching and a tingling sensation, with great heat upon the tips of the fingers, especially around the nails and quick, extending to the middle joints of the fingers. Upon a close examination it will be found that there are large numbers of small red patches, with small specks or elevations in clusters. In the course of about twenty-four hours these spots become swollen into pustules about the size of a pinhead, filled with a watery fluid. In a short time, which varies with different constitutions—perhaps two or three days—these small blisters join into a larger mass and produce larger blisters, which become partly dried, and then crack. It is from now on that the previous itching ceases and intense pain follows, the skin presenting the appearance of raw beef. If, however, a drying up of the poisoned hands or arms takes place, the itching returns in a more intensified form.

"Pustules may later form upon different parts of the body, on the neck, down the spine, on the arms, and sometimes on the feet. At this stage there will be a constant feeling of sickness, loss of appetite, thirst, fever, and sleeplessness. The mucous membrane is likely to become inflamed, and severe pain experienced in the throat and ears. When the poisoning has reached this stage blindness may take place, and the sufferer may entirely lose consciousness and suffer great pain in the bladder and intestines. Such are the symptoms of bichromate poisoning from the mildest to the most severe stages.

"The question now presents itself, How can any or all of these effects be prevented? One excellent plan is to dissolve an ounce of white wax in six ounces of sulphuric ether. Pour a small quantity into the palm of one hand, then rub this all over the hands, rubbing it well into the tips of the finger nails, and well into the quick, and then thoroughly all over both hands. Then take a clean dry towel and wipe the hands well. The pores of the skin become filled with the wax, preventing the entry of the bichromate solution. This applies particularly to those engaged in the photo-engraving business, where photo-etching is carried on in line and half-tone work, whether by zinc or the enamel process on copper, where the hands must be free.

"In the sensitising of carbon tissue, even when the indiarubber gloves are used, it is a safe precaution to wax the hands first, so as to prevent any action of the bichromate in the event of any part of the glove becoming injured, permitting an inflow of the solution.

"Assuming that poison has set in, it is an excellent plan to use a mixture of subacetate of lead and acetic acid to bathe the parts affected. This is very painful to use, but it will stop the progress of the disease. The salt of lead appears to be attacked by the chromic acid of the bichromate, forming chromate of lead, an inert substance.

"When once the early symptoms of poisoning show themselves, strict attention should be given to diet. The patient must abstain from drinking coffee, spirits, or beer; he must eat no potatoes, sugar, or salt fish, and must abandon the use of tobacco. Get all the fresh air possible, and do a great deal of walking. If the above points are strictly attended to when the early stages of poisoning set in, the disease will not spread; but should it be neglected and the more serious stages of the disease become manifest, advice should at once be obtained from a competent physician. In the use of the bichromates it is at all times a good practice to wash the hands in a dilute solution of acetate of lead—half an ounce of acetate of lead to twenty ounces of water. Then rinse the hands well in running water, after which they may be washed in warm water with soap. Never rinse the hands with ammonia after the use of bichromates, as this is not an antidote for bichromate poisoning. On the contrary, it may assist in the absorption of the poison and rapidly produce the effects it is desired to avoid."

Digitized by Google

No. 126.—JUNE, 1904.

THE PROCESS PHOTOGRAM AND ILLUSTRATOR.

PRACTICE AND THEORY OF HALF-TONE ETCHING.

By E. Klimsch.

(Translated, by permission, from *Klimsch's Jahrbuch*, 1903.)

(*Continued from p.* 68.)

It will have been clear from what has been said that the manner in which a plate should be etched depends entirely on the character of the negative and of the print in regard to the tone value of the original. If the latter shows contrasts which are not rendered with sufficient strength in the negative, the bath must be rocked during etching and the liquid also brushed over. But if a plate from a soft original exhibits too great contrasts, undisturbed etching is preferable, as otherwise the plate may show hardness and loss of tone. On the other hand, apart from fidelity to the original, rocking and brushing are to be avoided, if the high-lights are sharp, if the shadows are fairly open in the print, or if the dot is strong up to the bright middle tones. This latter is especially liable to occur when a round stop is used in making the negative. The reason for dispensing with rocking and brushing as much as possible in these cases is that the fine connecting lines in the dot formation are more easily and more irregularly broken up by such vigorous etching. This phenomenon is a disturbing factor in the etching process, as we shall see when we consider after etching.

It is impossible to say how long the first etching should last, as the working conditions vary so greatly. The foregoing, however, will have given some idea of the necessary times and of the methods advisable under different circumstances. The reasons why, as a general rule, the first etching cannot be taken up to the necessary printing strength in the lights, have already been given. If I now say that even the after-etches (effect and fine-etching) cannot of themselves give sufficient printing strength, it is understood that a special "deep etching" is needed whereby the required end may be reached. This etching, called also "point deep etching," cannot

Digitized by Google

FIG. 7.—Incorrect Fine Etching.

be done on a plate which bears only a superficial enamel resist, for in this case a strong "bright etching" would take place. The plate is therefore worked up with a good hard roller in all directions with printing ink or etching ink until the edges of the dots throughout are covered. Finest asphalt powder is then dusted over with a powder puff and melted in the shadow portions, and the darker middle tones may fill in during this process without disadvantage, as they do not need the deep etching of the highlights. If the plate has been well inked, the etching bath can be applied for five minutes without watching its action. Rocking the bath is avoided, as thereby points of the thin protecting resist may be attacked. The slight extent to which this takes place in the "point-deep" etching proper will disappear in the fine-etching now to follow. A good pull is taken at this stage, and carefully compared in all parts with the original. In most cases the lights, and partly also the middle tones, will be too dark. Moreover, the various tones will not differ sufficiently from each other, and the details of the original are imperfectly rendered. The chief immediate task is therefore to "bright etch" the plate step by step so as to bring more life into the picture. As the tones are pushed forward and more effect brought into the picture, this part of the process is named "effect etching" or tone etching (fine etching). A general procedure is no longer possible, as differences in the originals call for separate and distinct treatment of the plates. Thus a portrait is treated differently from a landscape, a wash drawing from one in pencil or chalk, and so on. It is here that the art of the fine etcher begins. To technical skill the fine etcher must add a certain adeptness in draughtsmanship and an understanding of tone values and their correct reproduction.

First ascertaining that the surface of all dots not to be etched is covered (the sides as well), it follows that the brightening of the uncovered portions during the etching brings about a contrast between covered and uncovered portions. The contrast becomes greater as etching proceeds, becoming sooner or later evident by a distinct line. As the least trace of such local action is inadmissible, the etch must not last very long as a general rule. Two types of subject may be mentioned. One where very dark and very

Digitized by Google

bright tones are adjacent in the subject, as, for example, a church tower against a clear sky: the other where tones run gradually into each other, as in a portrait. In the first case, the fine-etching may be longer than usual without injury to the result; in the latter the sharp edges of the resisting varnish should be avoided even for the shortest etch. The method of work must therefore differ according to which of these two classes the subject falls into. There are three chief methods. The first consists in using asphalt varnish (solution in turpentine), and gives distinct lines on more prolonged etching. The second depends on working up with litho-chalk, and is well suited for gradations of tone without any sharp demarcations. The third method is the use of ferric chloride solution on a brush applied by hand without resist on the plate; in skilful hands it can be applied to cases of delicate tone gradations.

Fig. 8.—Correct Fine Etching.

Coming now first to the methods in which a resist is applied, it is advisable to keep to certain times for the separate etchings, as the most practised eye cannot safely recognise the slight alterations which take place during a short etch. Bringing together the facts that the etching takes place more quickly when the bath is rocked, and that coarser-screen plates must be etched sharper than fine-screen ones, the following table can be drawn up showing the times for producing more or less tone contrast:—

Tone Contrast.	Time of Etching-bath rocked.			Time of Etching-bath not rocked.		
	137-line screen.	152-line screen.	200-line screen.	137-line screen.	152-line screen.	200-line screen.
Scarcely noticeable	1 minute	¾ minute	½ minute	1¾ minute	1½ minute	1 minute
Weak	1½ ,,	1 ,,	¾ ,,	2½ ,,	2 ,,	1½ ,,
Fair	2 ,,	1½ ,,	1 ,,	3½ ,,	3 ,,	2 ,,
Strong	3 ,,	2 ,,	1½ ,,	5 ,,	4 ,,	3 ,,

Make it a principle to go only so far with the separate etchings as the

Digitized by Google

resist permits. If the table be adhered to, the result will be obtained in relatively few etchings. It is purely a matter of recognising with certainty which parts of the tones are finished. They are then completely covered up with the varnish. All those portions which will still stand brightening by long or short etching must remain open. Obviously the etching must be timed for the portions which are most nearly in the finished state and require only very little further etching. They are then in turn covered up and the parts needing still more etching proceeded with.

After these general observations I come to certain special cases. Let us take portraits first. We have in the face, neck and arms of a portrait, a series of very soft modulated tones without sharp boundary lines between them, so that there is little to be done in step-by-step etching. Even when the various etches are very brief, the traces of the boundary lines are liable to be unpleasantly visible in the finished proof (see fig. 7). Therefore one confines treatment of this kind to the eyes, nose and characteristic folds of the skin with a view to limiting the high-lights. For the more delicate parts it is better to use litho-chalk. A clever fine-etcher, it is true, can avoid sharp lines when he is using varnish, touching only the upper parts of the dots with the brush, yet it is easy to get a soft outline with a lithographic crayon. Going over the plate without pressure the chalk attaches itself almost only to the surfaces of the dots, whilst by applying pressure the edges can be caused to receive it, so that in this way parts still exposed to the reducing action of the bath and others in which this is not the case may be united.

To intensify soft gradations of tone and to get higher lights into the plate, brush etching must be used. A fine brush is kept exclusively for this purpose. The etching liquid is applied to the dry plate, free from varnish, the highest lights being first treated. After a short action, the surface being etched is enlarged step by step. Etching is arrested at any moment by going over the plate with a wet sponge; and after drying, the result is seen by rubbing in magnesia. If the action has not been sufficient the process is repeated. As no time is wasted in varnishing, this brush etching can be done very rapidly. Fig. 8 shows a properly etched plate as compared with fig. 7. We shall see later, however, that in some cases brush etching is not desirable for softly graduated tones.

In etching landscapes the mistake is often made of not holding the background back sufficiently, and in bringing up the details in it too strongly. This is entirely wrong practice. The foreground must appear stronger and show more detail than the distance. Fig. 10 shows this frequent error, whilst fig. 9 shows the landscape as it appears to the eye. The sky plays an important part in landscapes, and anything wrong with it has a very disturbing effect on the picture. If the original has not been retouched, the fine-etcher can remove an obvious defect of this description. Tone and brush-etching are suitable for this purpose, or if there is much in the way of dark spots and defects to remove, the whole sky can be broken up with the graver. Figs. 11 and 12 are a pair of comparison plates, showing how the sky can be improved, and the left half of fig. 13 shows how even gross defects can be got rid of. In many cases these defects are retouched out of the originals, so that the etcher has nothing to do with them. In etching skies and very bright parts of a subject, it is not advisable to take the etch so far as to give a "needle point" dot. In particular, if there is to be a decided tone the dot must have some surface to it. The elastic inking roller spreads over dots of needle fineness, with the result that darker and more irregular tones are given than if a less finely pointed dot were made. In the case of small pointed lights, not extending to decided areas, there is less to be said if the etching is taken to the extreme, or even if some of the dots are lost.

(To be continued.)

Digitized by Google

COLLODION TROUBLES.

THE glorious uncertainties of the wet collodion process move the writer of an editorial on this topic in the *Zeitschrift* to open his first paragraph with the words, "Im Kollodiumverfahren lernt niemand aus," which may be very freely paraphrased in the language of a now famous advertisement: "With wet collodion, you never know your luck." The usual care and knowledge may be applied to the work, yet the result departs more or less from its normal standard for no discoverable reason.

Two phenomena are especially liable to crop up:—(1) Fog which suddenly appears, without being attributable to the state of the silver bath or to the developer, and as suddenly disappears again, and (2) the non-adhesion of the film. The latter defect especially is the cause of endless difficulties in process work. The collodion film which yesterday held toughly and securely to the glass, separates from the intensified negative on washing, or more frequently on drying. The film is so brittle that it loses its coherence, or, at any rate, cannot retain its hold of the glass surface. There are two different reasons for the evil. An excessively brittle film is due either to the collodion cotton itself or to the quantity of water in the collodion. The first cause is seldom met with at the present day. If one compares the pyroxylin as now made with that of twenty years ago one finds good reason to congratulate manufacturers on the progress they have made. The pyroxylin now sold almost invariably gives very tough and resistant films.

Brittleness arises from an unsuitable proportion of water in the collodion, and the water may be admitted with the alcohol or ether, or both. The result is a friable or rotten film, the exact character of which depends to a great extent upon the methods of the operator. The film tends to become more and more friable the longer one waits before dipping the collodionised plate into the silver bath.

A more usual cause of a film, not necessarily rotten, leaving the glass is insufficient means of causing its adherence. The several substrata are very different in their properties. Good collodion will frequently stick to a well cleaned glass plate without any preparation whatever, or it is often sufficient to edge the plate with rubber solution to produce a completely adherent film. Even with bad cleaning and unsuitable collodion a proper adherence can be obtained with a rubber-prepared plate. A very convenient method of preparing the rubber solution is to dilute the ordinary cyclist's solution with twenty to forty times its volume of pure benzole. This preparation is preferable to a gelatine substratum under all circumstances. There are brands of gelatine which, when in such thin films as are suitable for this purpose, are completely soluble in cold water. The result of such preparation is naturally the separation of the film. Tanning agents, such as chrome alum, overcome the difficulty only to a slight degree in many cases. It is therefore advisable, if gelatine is to be used, to employ a very hard brand in not too thin solution. The following formula gives excellent results with wet collodion as well as with collodion emulsion:—Hard cooking gelatine (30 gms. or 1 oz.) is put in water to swell, and then dissolved in hot water (3,000 c.c. or 105 oz.). 50 c.c. ($1\frac{3}{4}$ oz.) of a 1 per cent. chrome alum solution (previously neutralised) is then added. Plates may be given a substratum with this mixture and stored in a cupboard until wanted.

Digitized by Google

PROCESS AT THE PRINTING EXHIBITION.

An international exhibition of the printing, stationery, and allied trades opened at the Agricultural Hall on April 30th, and closed on May 14th. The exhibition drew a strong support among printers, typefounders, art publishers, and others connected with the trade—not excepting photo-engravers. Among the latter were the American Collotype Co., Art Reproduction Co., T. and R. Annan & Sons, Arthur Cox Illustrating Co., W. & G. Baird, W. Büxenstein & Co., the Coe Collotype Co., Glasgow

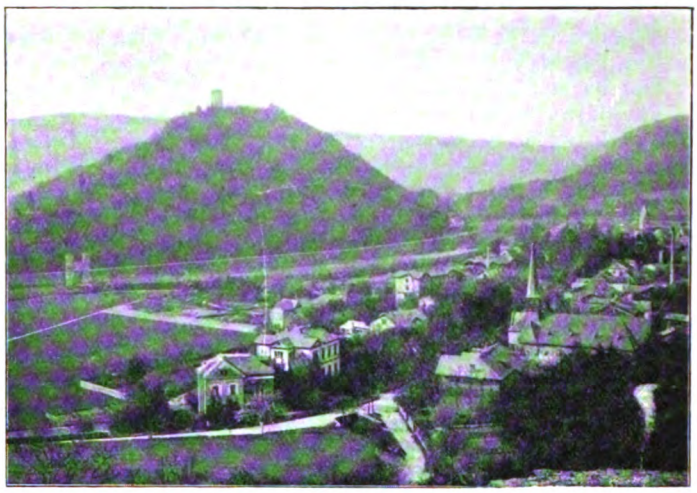


Fig. 9.

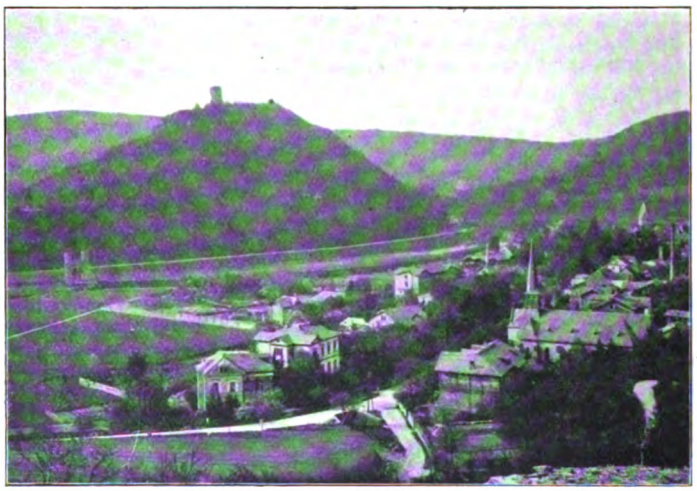


Fig. 10.

See Article, "Practice and Theory of Half-tone Etching," page 81.

Digitized by Google

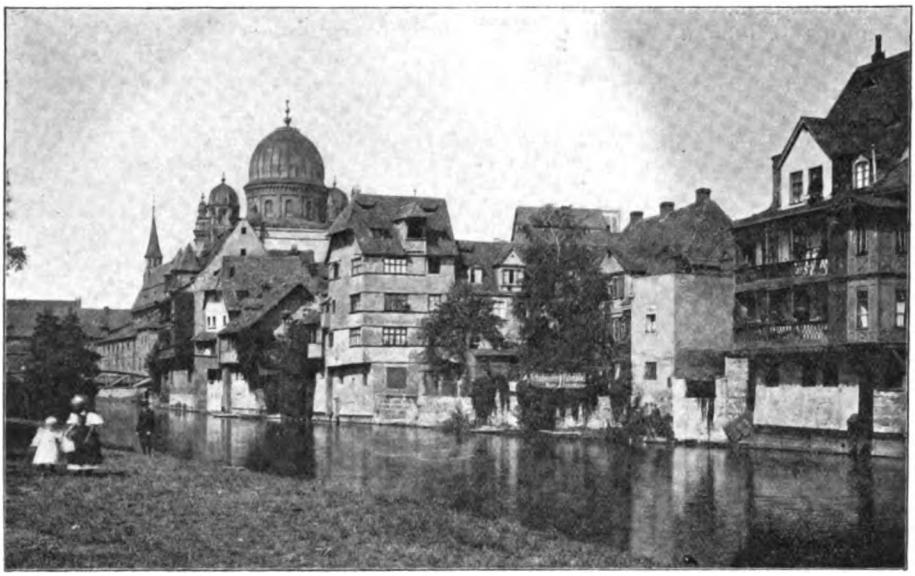


FIG. 11.

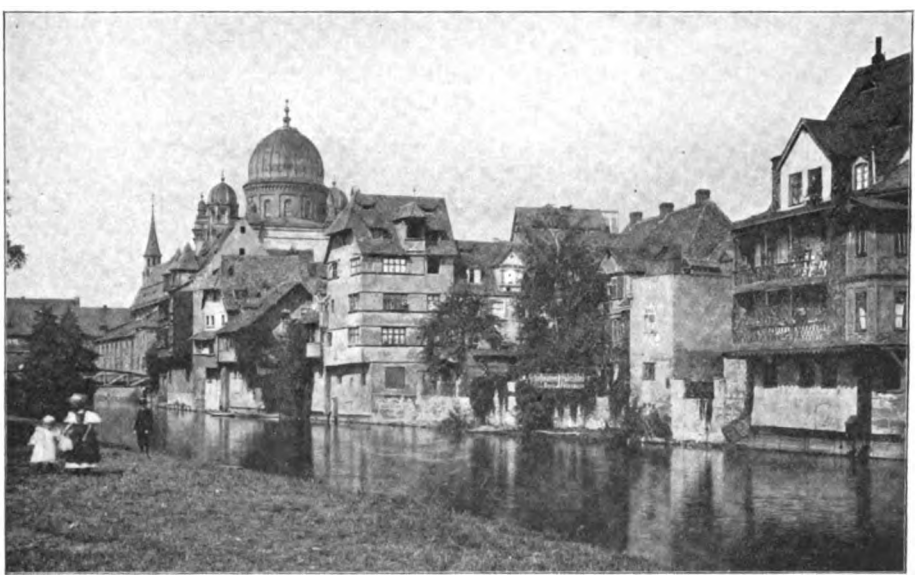


FIG. 12.

See Article, "Practice and Theory of Half-tone Etching," page 81.

Digitized by Google

Photo-engraving Co., Carl Hentschel, Ltd., Hood & Co., and Vaus & Crampton, Ltd. The chief exhibit of process apparatus was that of Messrs. Hunters, Ltd., who showed a large process camera, spring stand, pneumatic printing frame and copying lamps, together with a set of Haas screens placed below the testimony of Messrs. J. J. Waddington, Ltd., that they use no other. Messrs. A. W. Penrose & Co. contented themselves with a stall of books, including the recently issued Hübl's *Tri-color Photography*. Messrs. A. E. Dent & Co. of Brommel's Road, Clapham Common, S.W., did more than exhibit specimens of their tri-color process. With an ingenious chart they sought to make clear the ins and outs of the reproductive process. No doubt they issue this same chart on a post card, for not even a printer can be expected to commit to memory how the primary colors turn out in the printing inks, and after he has been over the scheme by memory, those same primaries may be red, white and blue. The chart is for home study.

Messrs. Soldan & Co., 72–75 Turnmill St., London, E.C., show a "lightning proof press" for quickly taking best pulls from half-tones without make ready. The machine has a very good ink distribution. The cylinder runs on type-high rails, and the blocks can be put in and out very quickly. Messrs. Soldan's catalogue (obtainable from 72–75 Turnmill St., London, E.C.) shows the various styles in which the machine is built.

Carl Hentschel, Ltd., occupied a large stand where was displayed a collection of reproductions in half-tone and more especially in Hentschel colortype. The *Half-Tone Times*, elsewhere reviewed in this issue, was also on sale at its advertised price of "ten minutes." An office-boy who had heard that it contained a portrait of Edna May was observed to secure one at less than this.

Aluminium plate printing was shown by Algraphy, Ltd., 57 and 59 Ludgate Hill, London, E.C., and at the stand of the Aluminium Rotary Press, Ltd. (of 6 and 8 Bouverie St., London, E.C.), a 48 + 35 "aluminium" press was shown in action.

Collotype was shown by the London Stereoscopic Co., 54 Cheapside, Valentine & Sons of Dundee, the Coe Collotype Co., and others.

The new photo-mechanical overlay — The De Vinne-Bierstadt — was represented by a number of specimens which spoke for it as eloquently as the vocal utterances of the active agent of the process, Mr. Paul Pfizenmayer, which gentleman, after having visited almost every country in the world demonstrating the overlay, is at present established at 5 New Street Square, E.C., with the express purpose of answering technical and business inquiries relating to the method.

Messrs. Furnival & Co., of Reddish Works, Stockport, found no space for the collotype machines with which their name is most closely associated in the minds of our readers, but they exhibited at their large stand two quad-demy printing machines, driven by motor—one a rotary aluminium press.

In the gallery we found a photo-stone exhibit, and, amid a collection of historical printing, etc., a very educative exhibit from the Bolt Court School. Photogravure, collotype, half-tones, and zincos were shown in their various stages, together with other work speaking well for the training of students in the London County Council's School.

Guy Symmons, for some years past instructor in photo-engraving and three-color work in the photographic school of the Regent Street Polytechnic, has been appointed technical manager of the photographic and color department of Messrs. Alf. Cooke, Ltd., Leeds. A paper by Mr. Symmons was recently read before the Royal Photographic Society, at which meeting Mr. Howard Farmer spoke as to his colleague's ability. Mr. Symmons recently left London for a tour of the process centres on the Continent.

Digitized by Google

STANDARDISING LIGHT-FILTER FORMULÆ.

ANYTHING which lightens the task of the experimenter in quest of the ideal light filter ought to be assured of support. For which reason we give prominence to the recommendations of MM. F. Monpillard and L. P. Clerc as recently laid before the Permanent Commission of the International Congress of Photography. Only those who have been through the mill know the heartbreaking disappointments which attend the trials of new formulæ for light filters or color sensitisers. Failure after failure are doubly bitter while the glowing commendations of the author of the formulæ are still in mind. MM. Monpillard and Clerc aim to remove friction of this kind as far as may be by calling upon writers to definitely state the names of the dyes, their commercial source and catalogue designation. If they succeed in doing this only, they may reasonably feel gratified, but they hope also to set up certain standard methods in the specification of screens which will make it possible for one experimenter to compare his work with that of another. Truly a consummation devoutly to be wished. The translation of their report, which we give below, is made from *Le Procédé*.

"Ordinary light filters are classified in three divisions:—(1) Plane-parallel cells containing colored liquids; (2) clear glass, bearing a colored film; (3) body-colored glass.

"Light filters of the third order are made only commercially, and their formulæ and mode of preparation are not generally known. Moreover, they do not exhibit the same range as filters of the first two classes, and the Sub-Commission has therefore decided for the present to limit its suggestions to filters of these two kinds.

"A liquid light filter is sufficiently specified when we know (1) the internal thickness of the cell, and (2) the composition of the colored liquid. Inquiry has shown that the great majority of workers and manufacturers adopt 1 cm. as the internal width of the cell, and it is hoped that this custom may become universal. The composition of the solutions is defined if the formulæ for compounding them are expressed in the recognised manner (see below).

"Filters consisting of a colored film mounted on a piece of colorless glass may be prepared in two ways:—(1) A solution of gelatine is flowed over the glass, and the film thus formed dyed in a solution of the coloring matter; (2) a colored gelatine solution, or a colored collodion, is flowed over the glass.

"The first of these methods, although satisfactory in certain cases, does not lend itself to the preparation of several identical screens so well as the second.. Experiments, undertaken by M. Monpillard at the request of the Sub-Commission, showed that screens prepared by this imbibition method at various times are not of the same intensity, even when the working conditions are made as exactly similar as possible on the several occasions. It has been stated in support of this method that in consequence of the entirely superficial dyeing of the film of gelatine, a perfectly uniform filter is obtained, even if the gelatine film was not the same thickness throughout. To put these assertions to the test, glasses were coated with gelatine solutions which gave films varying in thickness from 27μ to 60μ. These films were then treated in the different dye-baths for the time prescribed by the authors; the colored films were stripped, dried, paraffined, and sections cut in a microtome. These sections, examined under the microscope by M. Monpillard, showed that the dyeing action had extended through the entire

Digitized by Google

thickness of the film. Hence the advantage ascribed to this mode of preparation is chimerical under the conditions which prevail for the dyeing. On the other hand, the drawbacks are numerous, every variation in the properties of the gelatine, in the proportion of foreign bodies, and in the temperature of the dyeing-bath, modifying the depth and, in certain cases, the tint of the filter.

"Hence there is good reason to discourage the making of screens by this process if the identity of filters made by formulæ at different times and by different workers is desired.

"The second method, which is adopted at the present time by many operators, lends itself excellently to the manufacture of identical light filters, so long as the dye-stuffs are properly specified. Making a solution of the dyes in a gelatinous liquid or in collodion, it is easy to apply to glass of known area a certain volume of liquid, taking all precautions to ensure a uniform film. If the same weight of dye is thus applied each time to the same area of glass, the filters will be identical. It is this method which the Commission recommends in the following terms:—

"I. In order to facilitate the manufacture of identical film light filters the Permanent Commission of the International Congress of Photography recommends the preparation of the filters by flowing over a given area of glass a given volume of dye dissolved in gelatinous solution or in collodion, all precautions being taken to obtain a film of uniform thickness. The Commission considers that it is impossible to prepare light filters of identical depth and color by dyeing a plain gelatine film. In formulæ for filters, the weight of each dye per sq. cm. of the filter should be stated.

"II. Liquid light filters are employed in plane-parallel cells of 1 cm. internal thickness (or the cells may be formed of compartments each 1 cm.

FIG. 13.

See Article, "Practice and Theory of Half-tone Etching," page 81.

Digitized by Google

thick). The composition of the colored liquids is to be expressed, according to the rules drawn up by the International Congress, as follows:—

"(*a*) The constituents should be set down in the order in which they should be introduced into the mixture.

"(*b*) Solid bodies should be given in weight, and liquids in volumes at 15° C. Preferably the gramme should be chosen as the part by weight, and the cubic centimetre as the part by volume.

"(*c*) The various weights or volumes should be given for a total of 1,000. The volume of that liquid which figures most largely in the formula (usually water) need not necessarily be given, but should be prescribed thus:—'A quantity to make 1,000 c.c. of solution.'

"The comparison of these screens with those of the first order is facilitated by the fact that under these circumstances the weight, in milligrammes, of dye subtended by a pencil of light of 1 sq. cm. section is represented by the same number denoting the weight in grammes of dye 1,000 c.c. of solution.

"III. The Commission utters a reminder that a large number of artificial dyes are subject to variations, even when sold under certain names and trade marks. For this reason it is desirable that in light-filter formulæ substances of definite chemical composition are used as much as possible. In the case of commercial organic dyes, the name of the maker should be stated, with the exact title of the dye and its catalogue number or mark."

INTENSIFYING COLLODION AND GELATINE NEGATIVES.

MANY processes for increasing the contrasts in photographic negatives, not sufficiently developed without endangering the clearness of the shadows, have long been in use. Most of them are based on the combination of the silver, which forms the negative image, with either additional silver or with another metal, or compound of a non-actinic color. In another category from these chemical intensification methods, are those depending on the special property of silver bromide, of being more strongly affected by certain kinds of light than by others. Such methods may be called "optical," though they do not depend wholly on the chemical action of light. From another standpoint, these latter methods are still further removed from the first. In applying them, a duplicate on paper is taken from the negative to be improved, and this duplicate dyed red by any suitable means. A strong positive is then made in the camera from this dyed image, and from it, by repeating the operations, a still better negative obtained.

These indirect processes, however, possess no practical importance, whilst the various direct chemical methods by which the faulty negative is converted into a decent printer, can be applied with more or less success. The vehicle which carries the silver image plays an important part in deciding which chemical intensifier shall be used. The two bodies, gelatine and collodion, which hold the sensitive silver salt, differ widely in their chemical properties, and the difference is one which becomes evident in the intensification process.

Among other properties, gelatine is a weak reducer, whereas collodion is not. Hence, in intensifying gelatine negatives, those combinations must be avoided which contain silver in such a delicately balanced condition that only a slight disturbance of the chemical equilibrium is necessary to precipitate it in the metallic state. For gelatine can disturb the equi

Digitized by Google

librium to this extent. Mixtures of silver salts with metol, hydroquinone, or pyrogallic acid belong to this order of easily decomposable bodies, from which the metal very readily separates. But this class of intensifier is of especial advantage for collodion negatives, as it permits a high degree of intensification. The separation of the silver from the solution is brought about by the silver image of the negative under treatment.

This power of silver to cause deposition of silver is very considerable in certain cases, and hence the suitability of the method in wet collodion work. With gelatine plates, silver intensification produces stain unless worked with the greatest care: for gelatine, it is necessary to employ intensifiers which are affected only by the silver images, not by other substances which may be present.

The single and double salts of mercury and the salts of uranium are of great importance for this purpose. They give, in one or several operations, intensified negatives, the colors of which range from black, through brownish black to red. Obviously, that intensifier is the best which is most simply used, permits great intensification, and gives a negative resembling the original as closely as possible in tone and purity of the high-lights.

Comparing three chief intensification processes—mercuric chloride (or bromide), uranium, and that known as "Agfa" (the latter prepared from mercury salts by the Actiengesellschaft für Anilinfabrikation, Berlin)—the following may be stated as to the efficiency of the respective processes:—As regards simplicity in use, uranium and "Agfa" excel the mercuric chloride or bromide method, since the intensification takes place in one instead of in two stages. Uranium has the drawback that the color of image is greatly altered, for which reason many photographers prefer mercury. The "Agfa" solution, however, has not this disadvantage, and may be looked upon as the most practically useful of the processes under consideration.

There is still one question to be answered: Silver intensification being, as has been shown, suitable for collodion but not for gelatine, are the uranium and mercury methods for gelatine but not for collodion? In reply, the mercury, Agfa and uranium intensifiers are very suitable for collodion negatives. True, the silver intensifier has the advantage that intensification can be carried further—a matter of some importance in process work. Also silver-intensified negatives can be still further intensified by any other method.—Dr. H. Erbe, in *Photographische Chronik*.

Chicago printers are said to be tumbling over each other to secure a new process for doubling the earnings of a platen press printing half-tones. Special plates are made by the Jahn & Ollier Engraving Co. for the promoters of the process, the Payne Printing Co. of South Haven, Michigan.

"Breezy" is an inadequate description of the columns of our Chicago contemporary, *The Plate-Maker's Criterion*. Seeing what the editor inserts we are sometimes moved to picture the grim smile with which he must withhold part of his copy from the printer. *The Plate-Maker's Criterion* is the organ of thirty-six Unions up and down the United States. Its pages are by "the boys" for "the boys." And "the boys" believe in having a good time and making things hum. Here, for example, is the story of a portrait from Buffalo:—

"One of those sneak thieves with a camera (an enemy), who carry concealed photographic weapons, came along intending to shoot Augustus. The latter was working in his back yard on Sunday, making things look respectable for Blue Monday, when the camera fiend came along trying to look innocent, and he, of course, overdid it by a glad smile at Blanck. Blanck tried to be just as friendly, and turned on that smile which if it was gas would make an awful bill at the end of the month. It is his private smile that he uses around the house.

"The camera fiend caught him when he was looking. So far Blanck has not seen the picture, and probably thinks it washed off the negative. They didn't show it to him for fear he would get out an injunction. Augustus was engaged in raking up the dead leaves in his back yard. It's a peculiar expression of face for a man who is engaged in removing the dead. That's how it came about to be."

Digitized by Google

Current Topics

"Bourne's Bits" continues to fix attention on our friends at 73 Ludgate Hill. The May issue, announcing a reduction of prices, will be sent free to any photographer, printer, or illustrator.

Romain Talbot, 46 Kaiser Wilhelm Strasse, Berlin, send us a circular of his most recent additions in the way of process appliances.

The Clarke Engraving Company, Ltd., has been reconstructed and is now capitalised at £1,500 in £1 shares. The first directors are L. Posener, G. Benington and Walter Benington, the latter well known for his pictorial photographic work.

Dyes for Color Photography.—Messrs. Fuerst Bros. of 17 Philpot Lane, E.C., send us a price list of the coal tar dyes of Messrs. Meister, Lucius & Brüning which they now supply specially for photographic purposes. The list includes all the dyes named in the formulæ which we print on another page.

A new kind of transfer paper has been placed on the market by Zimmermann & Werner, Dresden, under the name "Brillant," the new material remaining damp for a considerable time, showing no tendency to roll up and thus giving very sharp prints. More important still, however (according to the *Zeitschrift für Reproduktionstechnik*) is the fact that the drying of the ink is retarded. The proofs can be kept not only for a day or two, but for as long as a fortnight, without losing their capacity to transfer.

"The Half-Tone Times."—Mr. Stead advertised the last issue of *The Daily Paper*, but Mr. Carl Hentschel goes one better in announcing No. 1 of this journal as the first and only number—qualifying the threat in the next breath. *The Half-Tone Times* has an editorial heralding the day of the half-tone illustrated newspaper, and as a guarantee of good faith has printed on its newspaper stock a selection of half-tones in various screen-lineations — the illustrations being Carl Hentschel, Miss Gertie Millar, and other theatrical celebrities. There is much ingenious advertising, cleverly dressed up, in *The Half-Tone Times*, and we trust the heart of the management may be softened to prolong its life.

Sensitisers for Tri-color Collotype.—In a note recently contributed to the Photographic Society of Vienna, Professor A. Albert mentions that he had lately been using Orthochrom T for color sensitising the plates, and that one noticeable advantage of its use was the extremely small amount of retouching required. The negative for the red-printing plate received only twice the exposure, with excellent results.

Still better for such work, according to Albert, appears to be the new Pinachrom, also of Meister, Lucius & Brüning [sold in Britain by Fuerst Bros.—EDS.]. As the general rapidity of the plates is greater, the red printing plate is better and the process more suitable for exposures direct from nature.

Half-tone direct from Nature.—There is some talk in the American printing journals *The Printing Art* and *The Inland Printer* as to the alleged superiority of a block made direct through the screen from nature over one made for the photographic purposes. Commercially, the question is not worth much discussion, and even if it were, the technical arguments for improved rendering of detail in working direct from nature do not amount to much. *The Printing Art* in its April number prints a half-tone by the S. S. Kilburn Company, Boston, the original negative taken direct through the screen by Austin S. Kilburn. There is fine detail, it is true, but no more than in many a good block. There is also blurring of part of the foliage, suggesting movement during a relatively long exposure. No time of exposure is stated.

Three-color.—In the April issue of *The Printing Art* is a piece of tri-color work done with 100-line screens.

It represents, as our handsome contemporary points out, an innovation in three-color work, in that coarseness of the screen admits of printing upon ordinary papers and of being electrotyped readily. These features are especially desirable in offices which do not do much color printing, because of the greater ease in running. Coarse screen plates are especially desirable for catalogue covers, in that more durable stock can be used than ordinary weights of coated. These coarse screen plates are a special feature of the Boston Colorgraph Co., 234 Congress Street, Boston; and a specimen sheet showing the wide range of screens and diverse subjects is sent by them on application.

How the Plates were Rushed.—"Our daily chronicle of broken records continues to grow. A few nights ago several artists were sent by *The Daily Chronicle* to Portsmouth to draw the sad scenes of the burial of the Submarine A1 victims. We received their finished sketches at 11.15 p.m. We were ready; all decks cleared for action. For, as mentioned elsewhere, our way of taking time is to take time by the forelock. In one hour and twenty minutes the chief in person hurried over to *The Daily Chronicle* office with plates equal to about three-quarters of a full page size; all perfectly finished; thoroughly deeply etched; clear and clean at all points. Thus Portsmouth and other

Digitized by Google

readers had fine illustrations of the historic scenes on their breakfast tables, a record which secured the warm congratulations of the editor of *The Daily Chronicle*.

"What a far cry to the days of forty years ago, when, in publishing the news of Lord Palmerston's death, a leading illustrated journal announced that in a few weeks it hoped to present a portrait of his lordship."—*The Half-Tone Times*.

Pinaverdol.—This new dye of Meister, Lucius & Brüning is very favorably reported on by Baron von Hübl in the current number of *Photographische Korrespondenz*. "The dyestuff," he says, "is an excellent sensitiser, and imparts to collodio-bromide of silver a sensitiveness to the orange-green equal to that characteristic of the silver bromide. A mixture of the dye with ethyl violet recommended by Valenta for red sensitising gives a panchromatic plate, the total sensitiveness of which is four to five times that of a wet collodion plate." A formula recommended by Baron von Hübl is:—Pinaverdol (1 : 500), 70 c.c.; ethyl violet (1 : 500), 5 c.c.; collodo-bromide emulsion, 1,000 c.c.

The formula given by the British agents for Pinaverdol (Messrs. Fuerst Brothers, 17 Philpot Lane, E.C.) is as follows:—Dissolve 1 gm. (15 gr.) in 500 c.c. (¾ pint) alcohol, and mix 40 c.c. (680 mm.) of this solution with 1 litre (1¾ pint) bromide of silver collodion emulsion. The plates coated with this emulsion are bathed in water previous to exposure until the so-called fat marks disappear, and are exposed when damp. As the plates are also sensitive to orange, it is very important that care should be taken with the dark room light. The price of Pinaverdol is 7s. 6d. per gm.

Enamel.—The following enamel formula is stated by Hermann J. Schmidt (in *The Process Review*) to be second only to his dry enamel process:—"Le Page's unclarified fish glue, 4 oz.; albumen, 4 oz.; bichromate of ammonia, 1 oz.; water, 8 oz.; alcohol, 20 drops; ammonia, liquid, 20 drops.

"When getting the unclarified glue, it is advisable to take the contents out of the can as soon as it is opened. There is some acidity to nearly all glue, and to neutralise it, act in this manner and the glue will keep well for almost any length of time. Pour the contents of a gallon can of unclarified fish glue into a large glass bottle, test it with litmus paper, and if it shows acid, put into the glue two ounces of ammonia and two ounces of alcohol; if the glue shows no acidity, put it in anyway; mix up well, and put a cork to the bottle, and you will never have any trouble from that glue, I assure you.

"Now we come to the most important part of the work; that is developing. If you are doing your developing under the tap or in cold water you are wrong; no matter if your work is good, you are wrong and can do much better. Always use hot water for developing; have it *boiling* hot and lay your print into it for three to five minutes, and the plates will be washed out clear and sharp all over; every small dot will develop out clean and etch clean later. Use my formula, and the hot water will not hurt your plate. Of course if you use a formula that has no albumen it may not work, but the one herein given works finely. If using a dye to see your prints, you can put eosine or methyl violet into the developing water, and use this bath over and over again, as you can heat it in your pan, and pour into the developing dish."

"Three-color Photography," by Baron von Hübl (London: A. W. Penrose & Co.; 7s. 6d.).—In issuing a translation of the second and latest edition of Baron von Hübl's *Dreifarben photographie*, Messrs. Penrose are rendering a service to English speaking photographers, to those engaged in reproduction work more specially. We reviewed the German work at some considerable length, so that there is no need now for us to notice the technical and scientific contents of the volume. The translation has been done by Mr. H. O. Klein, who conveys the author's meaning with satisfactory exactness, and makes very few mistakes in the translation of technical terms, even if his text is frequently un-English. But we hasten to forgive deferred past participles, because the volume, as a whole, is wonderfully free from technical errors or "English" of the kind in which a German maker of cameras just now addresses us:—"Our establishment has been in last time again considerably enlarged, particularly by the erection and setting to work of a park of machines fitted out with the newest acquisitions of the presence, we are in the agreeable situation of manufacturing an *equally good work and* assuring a *quick delivery*." Mr. Klein's translation keeps fairly close to Baron von Hübl's German, but there are one or two instances (pages 38, 39, 110, 112, 137) in which it would have been better, because less open to misrepresentation, to have inserted certain phrases as footnotes instead of allowing them appear as though they were in the original German.

To the English edition is added an account of the Klein-Penrose three-color process, and an index, the absence of which latter was a great drawback to the German work. The color charts presented with the German edition are likewise included in *Three-color Photography*, being conveniently placed in a pocket on the inside back cover. The whole volume is handsomely produced, and we can thoroughly recommend it as the work most closely touching the practical problems of color-workers.

Combined Screen and Half-tone Plates.—Two methods of combining half-tone and line in a block are given by *Camera Craft*. Both are possible by the wet-plate process, but No. 1 can be used with dry plates:—

Digitized by Google

"I. Stock designs are prepared for the line work, and masks are cut, both the inner and the outer portions of the mask being preserved. The inner portion is fixed to a piece of plate glass the exact size of the ruled screen, and the outer portion is attached to the screen itself. The exact position in the holder must be marked so that the glass plate may be put in its place with certainty. The mask on the screen and on the plain glass plate should be so accurately placed that when one is laid over the other with their edges coinciding, the inner and outer masks fit together perfectly. The first exposure is the half-tone one, the picture being focussed with the masked screen in position. Naturally, when the exposure has been given, the sensitive plate will be unaffected under the mask. Accordingly the shutter can be closed, the dark slide taken out and the screen removed, the masked glass plate being put in exactly the same place. The line copy is put up and focussed so that the space to be occupied by the half-tone is exactly covered by the mask. The dark slide is returned to the camera (the sensitive plate not having been disturbed, of course), and the screen and the screen gear containing the masked glass plate brought close up to the sensitive plate, so that as little light as possible can creep under the edges of the mask. Make the line exposure, and the trick is done. The negative is developed, and is a combined line and half-tone which is printed on the zinc at one operation.

"II. The other method is simpler for the negative-maker, but more work for the stripper. The half-tone and line negatives are made the proper size. When stripping the negatives, to reverse them, they are turned on the same piece of glass, one negative over the other, so that they register perfectly. They are squeegeed down, and then with a sharp pointed penknife the two films are cut through just where the half-tone and line negative should join; the upper film is then stripped off, also the portion of the under film that is not wanted; the piecé of the upper film is then put in its proper place in the under film, and the combined negative is complete."

Photographing on Wood Blocks.—The following, given in reply to a correspondent, may perhaps be usefully printed here for the information of others:—

"We give you working details for two processes. The first, we should think, is more suitable if you have had no experience in wet collodion.

"1. Give final polish to wood block with very fine sandpaper, then rub in gently small quantity of zinc white, and polish off with the palm of the hand. Then take camel-hair brush and slightly damp with ordinary sensitising bath (say 60 grains silver nitrate to ounce of water), and gently brush over the surface of the wood. When dry print and fix by gently brushing hypo solution over by means of camel-hair brush, and rinse under tap quickly. If block is to be cut by gaslight, fixing is unnecessary. Don't let surface of block remain damp too long, for fear of warping.

"Some workers prefer to give the wood a special preparation as follows:—The solution, to render the surface of the wood impervious, consists of—Common gelatine, 5 parts; gum arabic, 2 parts; Castile soap, 3 parts; water, 100 parts. Dissolve by heat on a water bath. To apply it, the wood is rubbed with fine sandpaper, then heated over a spirit lamp to about 86° F. (30° C.), and upon it is poured in excess the liquefied and quite warm solution, which must be allowed to penetrate in the pores of the wood by letting it gelatinise, when it is wiped off clean. Nothing must remain on the surface of the wood. This done, and while still damp, the preparation is rendered insoluble by pouring over it a 5 per cent. solution of alum in water. The object of this preliminary operation is to render the wood impervious, and therefore to prevent the sensitising solution from penetrating. The wood is then heated again and its surface whitened with a little silver white or sulphate of barium, diffused in a small quantity of the following warm solution:—Gelatine, 1 part; alum, 0·1 part; water, 100 parts. While wet, this is smoothed with a jeweller's brush, taking care to leave on the wood a very thin layer of the mixture, only sufficient to obtain a white surface, which, by contrasting with the color of the wood, assists the engraver in his work. The wood should now be allowed to dry thoroughly, when it is coated with a tepid solution of isinglass, 2 parts; water, 100 parts, and dried. Now, the sensitising process differs according to whether the cliché is positive or negative. In the former case, the preparation is sensitised with the solution employed in the black process, proceeding afterwards as usual; in the latter, that is, when the cliché is negative, the best process is the cuprotype.

"2. For the collodion process the wood is prepared with the following formula:—Potassium bichromate, 2 parts; Nelson's No. 1 gelatine or ordinary sheet, 2 parts; water, 100 parts. After this has been applied and dried, a fine black, such as Farrow's photographic deadblack, is rubbed in, or the deadblack may be mixed with the bichromate solution. The collodion negative is stripped and laid down on the gelatinised wood. Some strong acetic acid solution is then flowed over it, or acetic acid can be used when stripping the film. It is very essential, however, that acetic acid should be used, as it is this which renders the film 'easily cutable' without tearing by securing it to the film of gelatine."

Digitized by Google

Orthochrom T.—Messrs. Fuerst Brothers, the British agents of the Hoechst factory of Meister, Lucius & Brüning, have issued revised formulæ for filters to be used in tri-color work which cancel those given in our issue of March last.

All screens may be used with plates prepared with Orthochrom T Hoechst or Pinachrome.

Of the colored gelatine, prepared according to the instructions given hereafter, 7 c.c. (¼ oz.) are poured on to every 100 square centimetres (40 sq. in.) of glass surface.

The screens consist of two such pieces of colored glass, glued together with Canada balsam.

A. *Color screens for the subtractive method (three-color print)* :—1. *Blue screen.*—4 grm. (60 gr.) violet crystals are dissolved in 100 c.c. (3½ oz.) of hot water by addition of 5 to 6 drops of acetic acid; 100 c.c. (100 parts) of an 8 per cent. gelatine solution are mixed with 6 c.c. (6 parts) of the color solution, and filtered.

2. *Green screen.*—3 grm. (45 gr.) Flavazine T, 6 grm. (90 gr.) Patent Blue, or 9 grm. (135 gr.) Green 1, are dissolved in 330 c.c. (12 oz.) of hot water; 100 c.c. (100 parts) of an 8 per cent. gelatine solution are mixed with 4 to 5 c.c. (4 to 5 parts) of the color solution, and filtered.

This permits of the passage of some red at the extreme end of the spectrum; but if this red (which is quite harmless) is to be absorbed entirely, dissolve 2·5 grm. (37½ gr.) Flavazine T, 6 grm. (90 gr.) Patent Blue, 4 grm. (60 gr.) naphthol green, in 400 c.c. (14 oz.) of water, and mix 100 c.c. (100 parts) of an 8 per cent. gelatine solution with 5 c.c. (5 parts) of color solution.

3. *Red screen.*—5 grm. (75 gr.) Red 1 are dissolved in 200 c.c. (7 oz.) of warm water. 100 c.c. (100 parts) of an 8 per cent. gelatine solution are mixed with 4 c.c. (4 parts) of color solution, and filtered.

Relative times of exposure (when using Orthochrome plates): blue: green: red about as 1 : 3 : 6.

B. *Color screens for the additive method of three-color photography (chromoscope)* :—1. *Blue screen.*—3 grm. (45 gr.) violet crystals and 1 grm. (15 gr.) methylene blue free from zinc chloride are dissolved in 100 c.c. (3½ oz.) of warm water by adding 5 to 6 drops of acetic acid. 100 c.c. (100 parts) of an 8 per cent. gelatine solution are mixed with 7 to 8 c.c. (7 to 8 parts) of color solution, and filtered.

2. *Green screen.*—6 grm. (90 gr.) Flavazine T, 1 grm. (15 gr.) Patent Blue, or 7 grm. (105 gr.) Green 2, are dissolved in 140 c.c. (5 oz.) of warm water. 100 c.c. (100 parts) of an 8 per cent. gelatine solution are mixed with 7 to 8 c.c. (7 to 8 parts) of color solution and filtered.

If the extreme red is also to be absorbed here, dissolve 6 grm. (90 gr.) Flavazine T, 1 grm. (15 gr.) Patent Blue, 2 grm. (30 gr.) naphthol green, in 180 c.c. (6½ oz.) water. Mix 100 c.c. (100 parts) of an 8 per cent. gelatine solution with 8 to 9 c.c. (8 to 9 parts) of color solution.

3. *Red screen.*—4 grm. (60 gr.) Flavazine T, 3·5 grm. (52½ gr.) Rose Bengale, or 7·5 grm. (112½ gr.) red 2, are dissolved in 150 c.c. (5⅓ oz.) of water. 100 c.c. (100 parts) of an 8 per cent. gelatine solution are mixed with 7 to 8 c.c. (7 to 8 parts) of color solution, and filtered.

Relative times of exposure (when using orthochrome plates):—Blue, green, red about as 1 : 5 : 8; (when using pinachrome-plates)—blue, green, red about as 1 : 4 : 3.

All color materials being absolutely chemically pure, the screens always dry up evenly and clearly.

The watery color solutions are stable.

The following are the directions for sensitising with Orthochrom T:—The plates prepared with Orthochrom T Hoechst can be developed with any good developer, but we recommend especially our Pinakol P. On account of the high red sensitiveness we recommend that the plates, when put into the dark slide, are not exposed to a red light. The red light in the dark room should be only the light of the extreme end of the spectrum. Always develop in covered dishes, and do not expose the plates too often to the red light. The dye is used in such small quantities that the gelatine layer itself does not appear to be colored thereby.

Solution A.—For use dissolve 1 grm. (17 gr.) Orthochrom T Hoechst in 100 c.c. (4 oz.) warm alcohol. Then add 400 c.c. (16 oz.) alcohol and 500 c.c. (20 oz.) distilled water.

Keep this solution in brown bottles in the dark, and it will keep indefinitely.

For dyeing the emulsion, take for every litre (32 oz.) bromide of silver gelatine emulsion—6–10 grm. (100–170 gr.) of the above solution.

For sensitising dry plates use plates which are absolutely clear from fog, and bathe same in the dark for three to four minutes in the following solution:—200 c.c. (8 oz.) distilled water, 35 gr. ammonia, 50–70 gr. Solution A.

Then wash for two or three minutes in running and changed water, and dry as quickly as possible in an absolutely dark space. The plates when carefully prepared will keep a few months and possess a high grade of sensitiveness.

Digitized by Google

No. 127.—JULY, 1904.

THE PROCESS PHOTOGRAM AND ILLUSTRATOR.

TRI-COLOR FILTERS AND DIRECT TRI-COLOR WORK.

ALFRED J. NEWTON AND A. J. BULL, OF THE BOLT COURT SCHOOL, AT THE ROYAL PHOTOGRAPHIC SOCIETY.

(Specially reported for *The Process Photogram*.)

A LITTLE over six months ago Messrs. Newton and Bull communicated to the Royal Photographic Society the results of a long series of experiments on commercial color-sensitive plates, and color-sensitisers for collodion emulsion (*The Process Photogram*, December, 1903). On May 31st a second paper was read by them, which supplements the first by dealing with the more involved problems of tri-color filters. The paper, which will appear in due course in *The Photographic Journal*, is entitled:—"The Practical Performance of Tri-color Filters, being some experiments to determine the best form of spectrum record for three-color filters."

The investigation principally consisted of the examination of commercial light-filters for three-color work, and of others prepared at Bolt Court, of which the composition was specified. The method adopted consisted in reproducing, by strictly mechanical half-tone process, an oil-color chart of Windsor & Newton's, containing a wide range of reds, yellows, greens, blues, violets and crimsons; in other words, an extremely difficult test object. The color-record negatives were made of this, using the plates recommended for the filters. Exposure and development were controlled (the latter by factor) to reproduce a black and white scale, photographed alongside the chart in each case, exactly the same in each negative. Contact transparencies were then taken on dry plates, and from these the screen negatives made on wet collodion and blocks then made by the fish-glue process, with rough etching only. Hand or local interference was barred at every stage of the process, down to the exclusion of the overlay in printing the blocks. The results

Digitized by Google

naturally lack the brilliancy of proofs from fine-etched blocks, but show what the filters will do.

A second series of exposures in equivalent ratios was made on the spectrum with the object of tracing the action of the filters, these also being turned into half-tone blocks and proved as above described.

In the difficult matter of inks, the authors examined fourteen sets by different makers without finding one set to correspond with the proper *minus* colors. The yellow used was Brooke, Simpson & Spiller's No. 2,956, the *minus* green, an ink specially made for them by Fleming of Edinburgh, and called New Process F. Like the *minus* red—Messrs. Shackell Edwards' Trichromatic Blue—it was far from theoretically correct, though much nearer the truth than other inks. The difficulty with the blue ink was found to be its transparency to red when the proper shade of blue is obtained.

Without the reproductions before him, the reader would benefit little from any report of the authors' notes, and we may therefore confine ourselves to their general conclusions.

The first of these is that the tri-color filters and plates cannot follow the theoretical color-mixture or color-sensation curves prescribed by certain authorities. The dictum is not likely to cause consternation in the mind of color operators in the trade, to whom color-sensation curves are of about as much concern as the Rubáiyát of Omar Khayyám. The inability to comply with theoretical requirements is the fault of the plates, which even when slow do not exhibit a regular proportion between light action and opacity over the whole range of action. In the case of the rapid plates necessary in tri-color work this region of proportionality is still more restricted.

The difficulties of the tri-color worker are still more acute when extreme color contrasts such as dark green and light crimson, dark blue and pale yellow, deep orange and weak blue, come to be recorded. Such subjects may require special provision in the way of narrower-band filters, for with those preferred for normal work the light tones will probably be fully exposed long before the deeper ones are fully impressed.

The normal disposition of filters should be somewhat as follows:—

The Blue-violet recording the spectrum			-	to 5,000.
Green	,,	,,	- -	4,600 to 6,000.
Red	,,	,,	- -	5,800 to end.

These figures, which indicate the recommended overlap, are for subjects fairly within the gradation of the plates and for the inks above mentioned, or approaching more closely to true *minus* colors.

The dyes used by the authors for filters of this description are as follows:—

For the blue filter.—Victoria blue, crystal violet and quinine sulphate.

For the green filter.—Napthol green and napthol yellow.

For the red filter.—Fast red and tartrazin. These filters are for Albert's emulsion sensitised with Pinaverdol (4 c.c. of 1 : 500 solution per 100 c.c. of emulsion) for the blue and green sensations; with ethyl violet (2 c.c. 1 : 500 solution per 100 c.c. emulsion) for the red sensation.

For dry plates a blue filter of quinine sulphate is used with an "ordinary" plate of moderate sensitiveness.

The red filter is made from Biebrich scarlet, or better with a mixture of Fast red and Tartrazin, made up to match the Biebrich scarlet, in absorption, as these last two dyes can be dissolved without the aid of alcohol. This filter is used with a Lumière C plate.

The green filter, for use with the typical orthochromatic plate, is acid

Digitized by Google

green with quinine sulphate. It was prepared to fill up the insensitive gap, in the blue-green, of the average erythrosin plate.

In a further set of filters for dry plate work the red and blue filters given above were used with a green one prepared to record the yellow, green, blue and violet of the spectrum evenly, so as to counteract the lack of transparency of crimson printing inks to violet, and the too great transparency of blue printing inks to red. This filter, for use with the Cadett "Spectrum" plate, is made from Fast green, Tartrazin and Quinine Sulphate.

A narrow, even green filter to record the greens fully on a normally exposed ("Spectrum") plate is made from Napthol yellow S.L. and Napthol green.

Still another green filter which, with the red and blue screens given above, was stated to have given the best reproduction of any, was one recording the yellow, green and blue up to 4,600, and was compounded from napthol yellow and napthol green in different proportions.

The quinine sulphate which figures in certain of the formulæ is used by Messrs. Newton and Bull to absorb ultra-violet light. When reflected from colors other than blues and violets, *e.g.* certain browns, scarlets and yellows, ultra-violet rays reproduce these colors with distinctly incorrect shades.

In regard to the red sensation negative, the authors believe in recording all the red they can get, and hence recommend ethyl violet with collodion emulsion or pinachrom with dry plates.

In no part of the spectrum should there be unrecorded gaps, for though these may not affect the result in the case of mixed colors of pale tints, they will seriously alter the rendering of colors with spectra confined to the gaps.

Coming now to the question of direct color work through the cross-line screen, the authors formulate a process which has many strong claims to notice. It is based on the Albert collodion emulsion, and therefore does not involve the photo-engraver in a new material. And the routine of operations is the same in the case of each color-sensation, an advantage from the workshop standpoint. The sensitiser is Pinaverdol, the new dye of Meister, Lucius & Brüning, sold by Messrs. Fuerst Bros. It confers an almost even green sensitiveness and increases the speed of the plate without rendering it "foggy." The dye is added to the emulsion, which attains its full quality after twenty-four hours. The plates are washed for about two minutes before exposure, thereby gaining speed from the removal of the excess of dye.

For the red-sensation negative the Albert emulsion is sensitised with ethyl violet (1 part of 1:500 solution per 50 parts of emulsion), which, like Pinaverdol, wants a little time to develop the speed of the emulsion, which does not then deteriorate. The plates also must be washed before exposure.

It was remarked that the set of collodion emulsion direct screen-negatives of the chart had quite "wet plate" quality, and it would have been difficult to wish anything better.

Drawing direct on Zinc.—"Shops that make a business of doing drawing as well as making cuts," says Will Sparks in *Camera Craft*, "can often save a great deal by making the drawing directly on the zinc. Many posters and show cards are turned out nowadays by making a drawing on cardboard, photographing it and printing on the zinc, and then etching. All the preliminary can be saved if the drawing is done directly on the zinc. Time and expense saved will double the profits. The process is simple, but many artists do not understand it. First polish the zinc plate, then immerse for a few moments in a weak solution of caustic potash. Rinse under the tap and dry the plate quickly. Etching ink diluted with turpentine will flow on this surface as perfectly as Higgins on cardboard. The powdering and etching are done in the usual manner."

Digitized by Google

THE GÜRTNER TWO-COLOR PROCESS.

THE two-color process at one exposure, of which a good deal has been said on the Continent lately, has at length been patented in Great Britain,* and English process men can now decide, from the description given below, whether there is anything in the method for business purposes. Obviously the strongest claims of the process are those which it makes for the favor of the amateur and outdoor worker, by virtue of its sacrifice of successive exposures and the multiplication of color screens. Whether these alleged advantages are of practical value from the photo-mechanical point of view may be questioned, but the patentee, Herr A. A. Gürtner of 3 Landhausweg, Berne, puts the process application of his method first in his specification. Expressed in practically his own words, that method is as follows:—

"An essential feature consists in that the light is allowed to fall directly (*i.e.* without the intervention of a colored screen or reflector) from the lens on to the film or plate for producing the orange or yellowish-red picture, and also in that the film or plate is tinted with orange or yellowish-red, and is arranged in front of the second sensitised plate so as to serve as a color-filter therefor.

"For this purpose a sensitised plate, which is sensitive to blue rays and which is as transparent as possible, is immersed in a solution of any suitable orange dye and, after drying, is placed with the film side on the film side of an orthochromatic plate. This double plate is preferably united into one plate by any suitable means, and is then placed in the dark slide of the photographic camera in such a manner that the colored plate is turned with its glass side towards the lens. The colored film thus acts as a color filter for the orthochromatic plate lying behind the same, and also serves for the production of the orange picture—that is to say, the prints obtained therefrom are colored orange or yellowish-red, whilst the orthochromatic plate serves for the production of the blue picture.

"The process is preferably carried into practice by immersing a chlorbromide of silver plate or a chloride of silver plate, such as is sold commercially, in an aqueous solution of aniline orange, until it appears colored deep orange when seen by transmitted light. After the plate so treated is dried, it is united film to film with an orthochromatic plate, the sensitiveness of which for yellow and red is predominant, by cementing or pasting the edges with strips of paper or other suitable material, in which operation care is to be taken that the two films touch each other at all points in order to obtain perfectly sharp negatives. The double plate so prepared is then placed in the dark slide of the photographic camera and exposed. In the exposure, the orthochromatic plate is acted upon by the yellow and red rays penetrating the plate serving as a color filter, whilst on the front plate the blue rays act predominantly. Thus after development two negatives are obtained, of which one serves for the production of orange colored component pictures, and the other for the production of blue component pictures, which superposed, or printed over each other as in photo-mechanical printing, give a colored picture that approximates very closely to Nature if, in the object taken, there are no pure red tones, as is generally the case. The choice of the kind of plates and the preparation of the plates for the negative are to be such that with a single exposure of the front and rear plates both plates are correctly exposed. The coloring of the chloride or

* English Patent 7,924, 1903.

Digitized by Google

chlorbromide of silver plate must have such intensity that, when this plate is correctly exposed, the orthochromatic plate is preferably somewhat over-exposed.

"The two plates, exposed in the manner above described, can be developed in any suitable developer. The fixing can take place in a 10 per cent. solution of thiosulphate of soda (commonly known as hypo). The orange coloration of the chlorbromide of silver plate gradually becomes lost in the various baths, which is of advantage in the printing.

"The negatives can be copied or printed in color both on to glass, paper, or on any other suitable base or carrier; or they can be used in the manufacture of blocks for the colored component pictures in the photo-mechanical process of printing.

"The production of prints by the photo-mechanical process takes place in a similar manner to that of the well known tri-color printing, with the difference that instead of the red and yellow component impressions a single orange-colored impression is made."

THE FIRST EXHIBITION OF THREE-COLOR IN PARIS.

Specially contributed to "The Process Photogram" by a Visitor.

THE exhibition just closed, held in Paris throughout May, organised by le Comité d'Études Photochromiques and the Photo-Club de Paris, is the first one specially devoted to three-color, and, on the whole, was an excellently well arranged and interesting show. To deal with the points which specially struck an English visitor; first, there were the very large three and four-color half-tones. One from Angerer & Göschl was 28 in. long and high in proportion; one from Husnik & Hausler 25 in. long; one from Rommler & Jonas, 23 in. long, and another from Société Lyonnais de Photogravure, 20 x 16 in.; also some big ones from Albert of Munich, 18 x 16 in. Apart from three-color, Angerer & Göschl also exhibited a very large half-tone, 32 x 24, showing the engraved copper plate as well. Besides the large typographic work, there were also some very large three-colors in collotype and carbon. Some of the carbon work was extremely good. One shown by Messrs. Vallot Frères, together with the original, was practically an absolute facsimile, and it would be difficult to tell at a little distance which was the painting and which was the reproduction. I have seen very little three-color carbon work here. I have only seen such work from one or two exhibitors at the Royal Photographic Society, whereas, at this show, there were at least half a dozen people showing very good work. There are also two exhibits of examples in three-color by gum-bichromate.

Coming back to the half-tone, some of it was quite excellent, much above the average. The comparison could here be made between three-color and four-color. We could see by the side of the brilliant three-color of the Society Lyonnaise and others, Messrs. Angerer & Göschl's and Albert's four-colors, and I think any unprejudiced observer must at once admit the superiority of the three-color. The fourth printing certainly seemed to me to considerably degrade the colors in the four-color reproductions.

There were several examples of how well color-prints can be set off by tasteful framing. Messrs. Draeger Frères framed a series of examples in wood, another firm had placed its proofs in contact with celluloid, other

Digitized by Google

firms had tried the effect of various greys, and some were mounted in gold mounts right to the edge of print.

Although the invitations specially asked for reproductions together with the originals, so far as I could see, there was only one firm, viz., Husnik & Hausler, who had complied with this request, beyond the carbon reproduction to which I have already referred. Certainly the six examples of reproductions of Husnik & Hausler were astonishingly faithful to the original shown by their side. It is difficult to say what greater perfection could be obtained.

It was very disappointing to find there were no examples from English houses there. I should have thought that an exhibit might have been sent by Messrs. André & Sleigh, or Messrs. Hentschel, Messrs. Swains, or others of the many photo-engravers who are now doing three-color, who, I suppose, had been notified of the show. Beautiful as the Continental work is, I am quite sure that the English work would have held its own by its side. The English exhibitors numbered two only. One was the London County Council School of Photo-Engraving, who sent an educational exhibit in the shape of a frame containing a set of three-color in progressive stages, showing the process throughout; a series of tests of orthochromatic plates, a series of reproductions of the spectrum, with graded exposures, made through various filters, and some other work. The other was the firm of Davidsons, of Brighton. Their exhibit, I am bound to say, is one of the least satisfactory examples in the show. Apparently the work is done by the Jumeaux-Davidson process, which has evidently not yet arrived at perfection.

Messrs. Davidson also showed their recently patented slide, which permits the obtaining of the three negatives at one exposure, with one lens and one color filter, this latter also acting as a mirror.

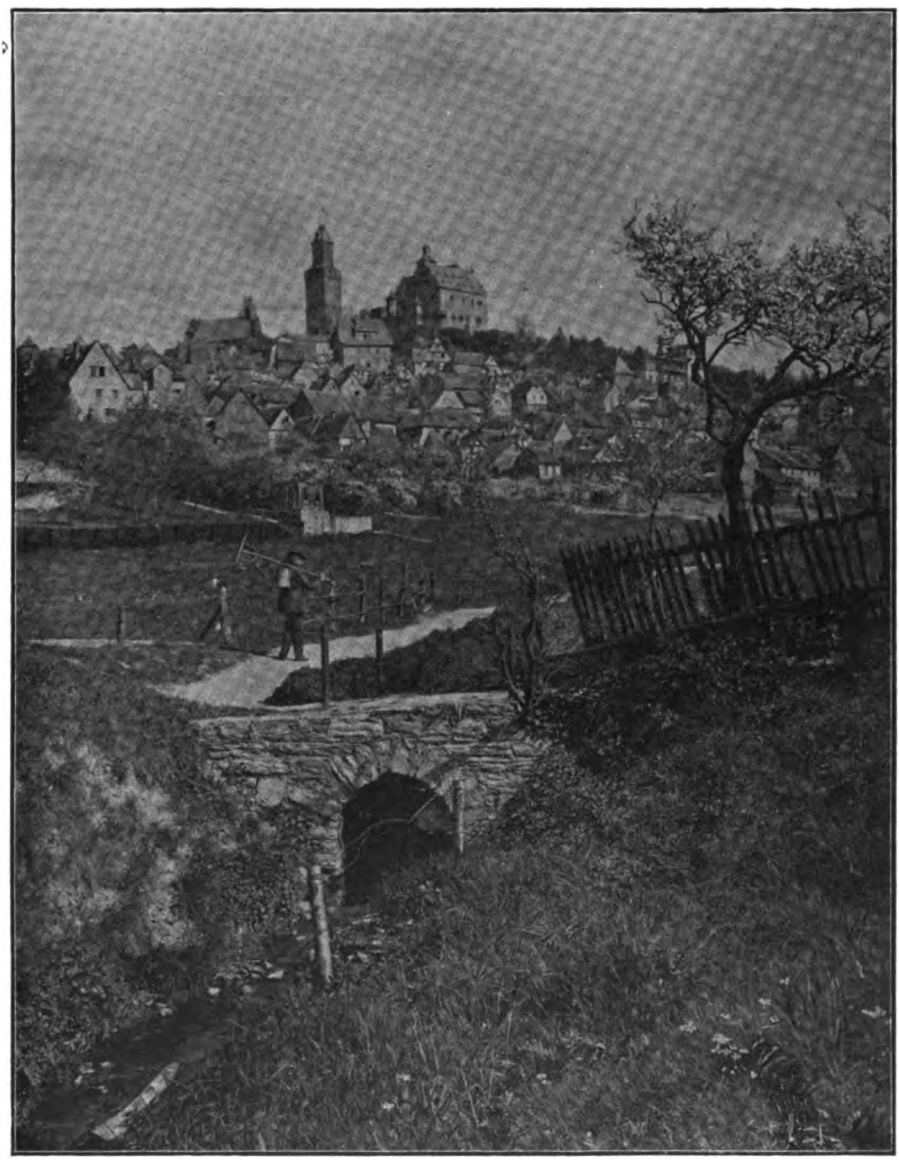
There were one or two photo-chromscopes, not in very good order when I looked at them. One of these showed a reproduction by two-color, but it was not very satisfactory. There were three or four stereoscopes for viewing three-color slides, such as Messrs. Lumière have sent to the Royal Photographic Society for their exhibitions for the last two or three years. Lumière's color reproductions in this apparatus look as vivid and good as usual, but I think that those of M. Victor Selb were, some of them, even better. The reproduction of interiors containing figures and such difficult objects as living models, glass, and other furniture, is certainly marvellous.

If the exhibition has done nothing else, it has shown the very great progress that is being made in portrait photography, and photography from objects other than pictures. There are quite a number of natural portraits reproduced by several different processes. There was only one exhibitor showing examples of work done by the Lippman process. But these were locked up in a case, so one could not examine them, although two of the spectra shown were very brilliant, and could be seen through the case.

There was very little show of apparatus; Messrs. Meister, Lucius & Brüning had a big case of their new dyes, and screens made from them, also reproductions showing results obtained with the aid of their materials. Our old friend Mr. Calmels had a stand, showing the Tallent Spectroscope Camera, and also practically every other requisite for three-color photography. Lumière, too, showed apparatus, and there was also shown an ingenious rotary method of holding the filters behind the lens of a studio camera, so that they can be placed into position at a minimum expense of time and trouble.

There is an excellent four-color photogravure from a water-color of our King, exhibited by M. Paul Dujardin, who assured me that this was proved in a straightforward manner on a power machine, a separate plate for

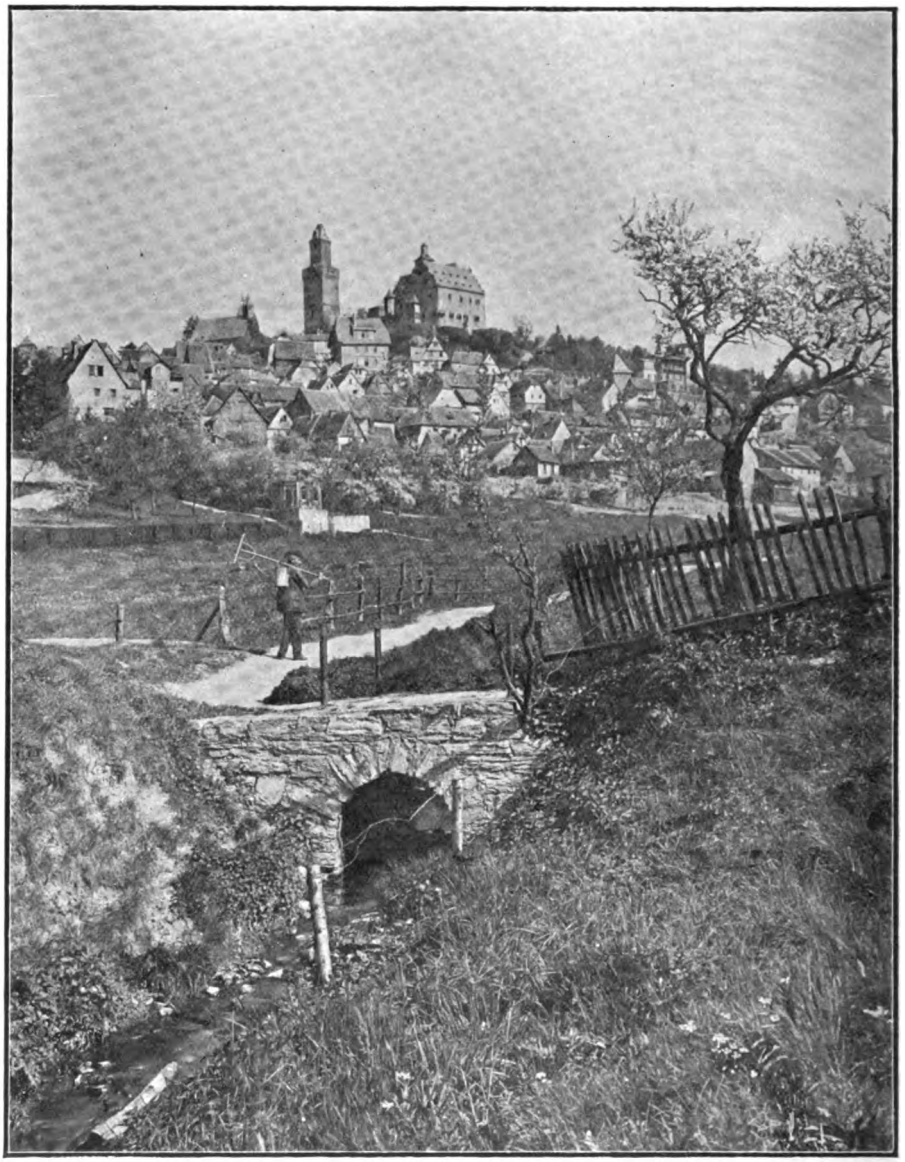
Digitized by Google



After rough-etching.

Article by E. Klimsch, page 105; block by Klimsch & Co., Frankfort-on-Main.

Digitized by Google



After deep-etching (no fine etching).

Article by E. Klimsch, page 105; block by Klimsch & Co., Frankfort-on-Main.

Digitized by Google

each separate color, just as a half-tone would be except for being in intaglio instead of relief, unlike some other beautiful photogravures shown, which are apparently done with only one plate, all the colors being appropriately placed on that plate (*e.g.*, dabbed on with sponges) before it is proved. With regard to photochromo lithography, there would appear to be only one exhibit, that from Photo-Glob of Zurich, who showed the same sort of proofs that we are familiar with in England, as photochromes.

There were some interesting historical exhibits from M. Ducos du Hauron, and a document was attached at the side of them, giving an account of his discoveries and the dates of the publication. The exhibits shown were of work done so far back as 1870 and onwards, throughout the seventies and eighties up to '91. M. Vidal exhibited an example of work done in 1869.

It was certainly a delightful locale to hold the exhibition, viz., at the Petit Palais, Champs-Elysées, Paris, and the visitor had his full franc's worth, for he could at the same time see the very large show of ordinary photographic work got together by the Photo-Club of Paris.

The catalogue had a very tasteful cover, and contained three reproductions in three-color.

PRACTICE AND THEORY OF HALF-TONE ETCHING.

By E. Klimsch.

(Translated, by permission, from *Klimsch's Jahrbuch*, 1903.)

(*Concluded from p.* 84.)

THE retirement of the distance behind the foreground just referred to is of special importance in cases where some one object in the foreground is to be given extra prominence. In portraiture, for example, the background is rendered unsharp, not only as a natural result of the large aperture lens which is employed, but with the object of concentrating interest on the subject proper. Ornaments, etc., in like manner, are subdued by being thus kept out of focus, and the mistake is often made by the etcher of carefully reconstituting all the details of these subsidiary portions. The "niggling" detail thus introduced leads to an unnatural and far from truthful reproduction of the original.

The ideal of a good reproduction is the production of an effect similar to that which the human eye receives when viewing the natural object. Anyone can prove to himself that in looking at a scene, only that part appears sharp on which his eye rests for the moment. Only a general impression of the rest is obtained, and the eye must traverse all these other parts in order to gather in the detail. In many cases, however, these details possess no interest whatever; they only draw attention away from the principal object. This is the frequent defect in the work of both professional and amateur photographers who make every part of their pictures of pin-point sharpness. In the ordinary course of half-tone, this extreme sharpness is somewhat relieved, but it rests with the etcher to say if it shall remain or not, for the detail can easily be destroyed.

Coming back to the background in reference to this question, one must first settle what the picture is primarily intended to represent. It may be a portrait of one or several, or it may be a landscape with figures present in a subsidiary capacity. On the other hand, a view of a small apartment in which figures are shown is a case of equally divided interest. But it is

Digitized by Google

nevertheless important to decide which is the important object in the original.

As a rule, the background should be subdued in the case of views with the strong interest in the foreground, such as racing, accidents, or feats of any kind. It would not be necessary to make these modifications had the photographer looked to the various points, but this cannot always be done in the hurry in which many of these exposures have to be made.

In the case of machines all the surroundings are usually removed by blocking out on the negative. If this has not been done, the machine is made to stand out from the surroundings by proper fine etching. In fig. 14, after etching in the usual way, the high-lights of the background were varnished, and etching continued to lighten the darker parts, the contrasts in the background being thus reduced. Fig. 15 is from the same negative without this special treatment. As a rule, skilful retouching of the print will save the etcher much work, and usually the background is painted out and a base for the machine put in. In these cases there is not much for the etcher to do, but in others where a "cut" price prevents a great amount of retouching on the print, the skilful fine etcher will even up shadows, soften lights, put in missing detail, and do much to produce a passable result. If certain special parts of a machine are to be shown, the etcher will work up these parts only, and, by extra etching, leave the other portions lighter and less pronounced.

The screen effect is a very objectionable feature in half-tone blocks. As almost every half-tone contains shadows, half-tone and high-light, there must be places at which the screen-formation and the open dots unite. In the treatment of the continuous tone, further etching gradually extends the limits of the open dot. But the resistance which the dot connections make to the action of the acid, becomes more irregular, the more energetic the action of the solution on the thin metal walls. The broader the parts with the finest screen formation, the more noticeable becomes the effect of this irregular disruption. In such cases all rocking of the bath or brush-etching should be avoided. The phenomenon is particularly striking if the plate is not uniformly inked for its point-deep etch, as its resistant properties are then more still un-uniform. Figs. 16 and 17 show the difference between the two modes of treatment. The operator can greatly aid the etcher by proper selection of the stop and time of exposure.

The vignetting of blocks is frequently done in an improper manner. Although the blame may safely be laid on the printer as often as on the etcher, yet many etchers take to this work most unwillingly, for a good vignette is the result of a very special skill. There are three chief ways of making a vignette. First by etching, second by engraving, and third by working up with the vignetting hammer. Engraving, in conjunction with suitable etching, is the process most frequently used. As the large establishments employ special engravers, the etcher, as a rule, has little to do. The vignette hammer lately introduced from America is at present little employed in Germany, but has certain advantages for quick work, as it is relatively simple to use and gives very passable vignettes in a short time. Of greater interest in the present connection is the preparation of a graduated surrounding edge by etching. As one will at once anticipate, step-by-step varnishings and etchings is no process for the present purpose. The subjects are first prepared with chalk, or resistant varnish is dabbed on with the finger. Fine etching being over, the edges outside the intended vignette are deepened with the routing machine (or etched away), and fine etching with a brush, already described, commenced. The outer edges are done first, the work progressing inwards. If the first application is not enough, the process is repeated in like manner. The etching should never go

Digitized by Google

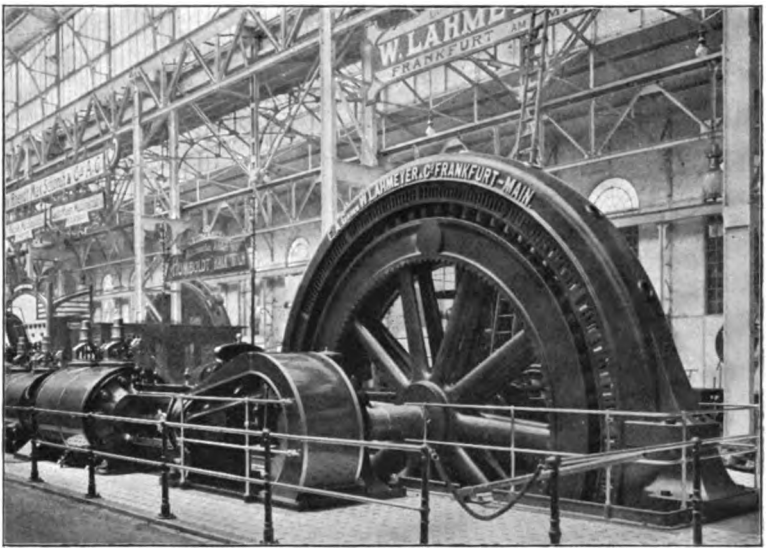


FIG. 14.—Shadows in background etched.

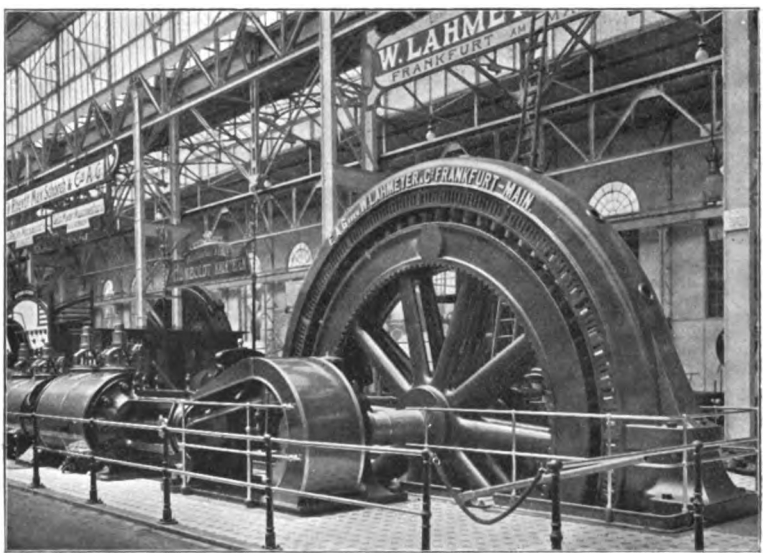


FIG. 15.—Direct from the negative used in fig. 14.

Digitized by Google

FIG. 16.

to the extreme of a pin-point dot, as clean printing is thereby rendered more difficult: no vignette that has not a continuous dot formation all through can be made to print well. The edges also are usually cut away to facilitate printing. In fig. 18 we have on the right, deepened edges without after treatment. On the under side the edge has been etched away to a pin-point dot, a clean impression being thereby rendered more difficult.

The left side has been lightened by brush etching and afterwards cut up with the engraving tool. The best gradations are of course obtained, with the lightest tones, whence the wisdom of working up the background of the original to this end. The air brush renders good service for this purpose.

In conclusion, I show three whole-page proofs from one and the same negative. They show the difference in blocks after first etch, after the further etching, and after completion by fine-etching.

Much more might be said on the treatment of different originals by the etcher, but I must here set a limit to this article. I hope that those etchers and beginners who do not know in every case which method to adopt, may be stimulated to discover that certain procedures are best in certain cases. The young etcher should not get into the way of working by routine, but should consider every block as an individual to be treated as the subject demands. In many cases his

FIG. 17.

Digitized by Google

work will be aided by the fact of his knowing the purpose for which the picture is intended, that is to say, the principal object it aims to represent.

SOME PRACTICAL NOTES.

Perchloride.—Many etchers make complaint about the uneven quality of perchloride of iron that is now on the market. Of course the best article, C.P., is always good—but expensive. My advice is to use that, says a writer in *Camera Craft*, but if you don't mind the trouble, and are using a good deal, it will pay you to make your own. Those who do, say that it is better than any on the market. Following is the way to proceed:

Take seven pounds of perchloride and boil in an enamelled iron pan in five pints of water; when the perchloride has completely dissolved, the solution will be transparent. Take out a couple of ounces and stir into this portion strong liquid ammonia; the result will be a thick pasty precipitate of ferric hydrate, which should be turned into a filter paper in a funnel and be washed free from ammonia by letting water filter through it. When the drippings from the filter no longer give a blue tinge to red litmus paper, the washing is complete. Take an ounce of perchloride from the boiled solution and add a small quantity of the pasty hydrate to it. If all the hydrate be dissolved, more will be required, and when it is seen that the hydrate is no longer taken up with the solution it will be evident that the latter contains no longer any free acid, and it is in a suitable condition for etching. Having noted the quantity used in the test you will know how much is required by the bulk. It will not matter if a bit too much be put in, as it will filter out. It is best to filter the liquid. A solution prepared in this way will be transparent, and will not become muddy and green as that which contains free acid. It also will be ready for use at once, and will not be likely to deposit the green scum of oxide on the plate, which is so difficult to remove. The solution should be diluted to thirty-five degrees Baumé.

Removing the Magnesia after fine etching is a question which correspondents of *Process Work* have been discussing. The following are some of the methods:—

I have always found the solution below invaluable, viz.:—

Water	20 oz.
Chromic acid	1 drm.
Sulphuric acid	1 ,,

Another solution which is also very effective is:—

Water	1 pint.
Nitric acid	½ oz.

—W. H. BLUNDELL.

The best way to remove magnesia from copper plates is to make up a solution of:—

Hydrochloric acid	10 oz.
Water	20 ,,
Salt	2 ,,

Pass the copper plate through this, rinse well with cold water. Not only will it remove all the magnesia sediment, but will clean all other dirt and grease from the plate.—H. E. TILYARD.

Magnesia can be removed from etched copper plate by the following method:—

Warm plate and apply a mixture of acetic acid and water (strength immaterial), scrub with stiff brush, and rinse under tap. The magnesia apparently goes into solution as magnesium acetate.

N.B.—It is essential to warm plate or solution, as reaction does not occur when cold.—F. DUGMORE.

Rinse plate, and while wet, flow over with hydrochloric acid (spirits of salts), or put in line-etcher's strong bath when line-etcher is not observing you.—H. W. POPE.

Put the plate in a nitric acid bath, give it a few rocks and a sponge over (1 oz. nitric acid to 1 pint water), or dip it in the line-etcher's bath if he is near you; then squirt it with water to clean off all the acid.

For fine etching use prepared chalk (not French chalk). It does not clog the lacquer brush, and is easier dissolved in the acid.—W. B. LAW.

Allow plate to lie for about a minute in a tray of lukewarm (not hot) lye, then pour on plate a small quantity (say 2 drm.) of methylated spirit; brush well, following lines of screen each way, and all foreign matter will be removed quickly.

Lime	2 pounds.
Washing soda	12 ,,

Boiled with 2 gallons of water for one and a half hours makes a useful solution for removing "lac" or "shellac."

Digitized by Google

Another formula is:—

Hydrochloric acid	3 oz.
Common salt	6 ,,
Methylated spirit	8 ,,
Water	8 ,,

Allow plate to lie one minute, then brush lightly, following the screen grain.—A. JINKS.

The insolubility of magnesia amalgamated with the Persal mordant has often occurred in my practice, and is easily removed by applying liquid ammonia ·880 to the affected part of the plate, and brushing with a small stiff brush. I use a stumpy hog-hair brush and brush each way with the screen ruling.—BURMAN NORTON.

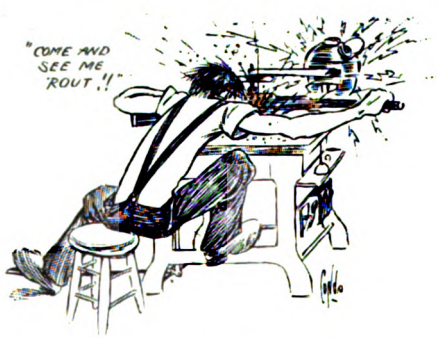
Mr. A. J. Newton, Principal of the L.C.C. School, informs *Process Work* that the mixture of chromic and sulphuric acid is what they usually use as an opening bath if the plate appears to be a little scummy, and also for cleaning out after etching.

Current Topics

The Cape Town Industrial Exhibition will be held in November. The sole photographic rights have been secured by The Cape Times, Ltd., printers and photo-engravers, St. George's Street, Cape Town.

Branfil's Curves for Square Measurement.—Messrs. A. W. Penrose issue these curves framed and glazed at 2s. 6d. The appliance is a very convenient one for the rapid measurement of process and other blocks up to 14 × 10 in.

The Inland Walton Engraving Co. has commenced business at 120-130 Sherman Street, Chicago. The officers are:—P. R. Hilton, president; F. P. Walton, vice-president and manager; A. W. Rathbun, treasurer; A. H. McQuilkin, secretary.



"Come and see me rout" is the title of a sketch which we reproduce from *The Plate-Makers' Criterion*, that it may afford pleasure to an even wider circle of process readers.

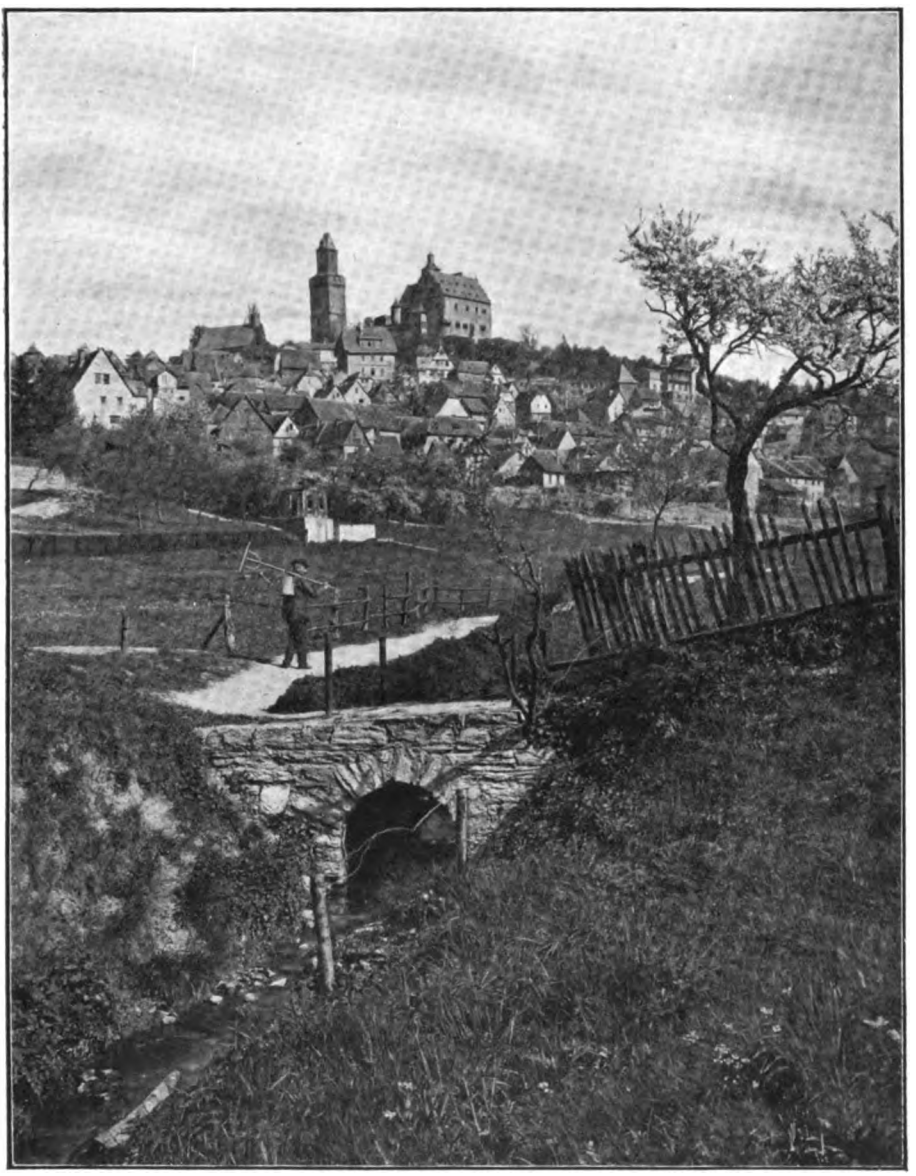
Charles W. Harness, 37 Princes Street, Wolverhampton, sends us a book of specimens of all kinds of photo- and wood-engraving, designed and produced by his firm. The examples include landscapes and portraits as well as a varied selection of worked blocks of machinery and manufactured articles, betokening the high-class work which the firm can turn out for catalogue illustration.

The Bissell College of Photo-Engraving, Effingham, Illinois, a private school of "process," send us the prospectus for 1904-5, from which we judge that the establishment is very thoroughly equipped and staffed. In addition to half-tone block-making, three-color work, photo-lithography and photogravure are taught. The fees are $165 (£33) for a year's course, and the college is in session twelve months in the year.

The Dalziel Color Press, Ltd., showed at the recent printers' exhibition a remarkably fine sheet of fourteen tri-color prints done together on their colored Picture Printing Press. The blocks were from various commercial sources, and the register throughout excellent. Mr. Harvey Dalziel, at the offices of the company, 2A Plough Court, Fleet Street, E.C., can supply further particulars as to the prices of printing by the process or of the machines themselves. The American patent of the invention is for sale.

Printing Tri-color Blocks in Sets.—"A printer asked me last week," says Will Sparks, in *Camera Craft*, "if it were possible to mount two or more three-color plates of irregular shape on the same block so that the whole set would register. Yes, there are two ways, and both are satisfactory. First mount one lot, preferably the blue, in whatever position you wish. Then pull a press proof of this on either transparent celluloid or fine bristol-board. In the case of the celluloid lay the impression over the block and fit the cuts underneath; move them around until they are in exactly the right place. Then put in your nails without disturbing the cuts. In case of the bristol-board, lay the impression face up on the imposing-stone. Put a little glue on the backs of the cuts. Fit the cuts, face down, in contact with the impression, and then lay the block over them. Put a weight on top until the glue dries. When this is done, put in the nails, and the cuts will register to a hair. Some blockers put a touch of paste on the face of the cut before fitting to the cardboard, but I have not found this necessary."

Digitized by Google



From finished block, fine etched. See article on "Practice and Theory of Half-tone Etching," p. 105.

Digitized by Google

Reproduction of Indicator-Diagrams.—The port of Ostend registers the fluctuations of the tide in the harbor by a form of mechanical indicator in which a diamond point moved by a rising or falling float engraves the surface of a rotating drum of zinc. In the current issue of the Bulletin of the Belgian Photographic Association, an account is given of the means adopted to take copies from these engraved plates. After being fixed on the drum the zinc is coated with a mixture of bitumen and yellow wax dissolved in benzene and turpentine, dried and sent, packed in silk paper, to the observing station. On receipt, after the record has been taken, the plates are retouched for faulty markings and then etched in nitric acid. Ferric chloride is used for etching plates containing a number of fine lines. After etching, the plate is freed from bitumen by means of a rag soaked in benzene, and proofs taken off the plate in a press on well sized paper. The method is said to have proved more satisfactory than lithography direct or by transfer.

Duplicating Cuts. — Arthur P. Eymann, Atchison, Kansas, writing to *The Inland Printer*, says:—"Having at various times profited largely from suggestions found in your Process Notes, I beg to contribute a simple method, which may not have occurred to many, for turning out quantity orders from a single copy. For instance: We recently had nine two-column etchings to make from one drawing of a trade-mark. By placing a sheet of red glazed paper, sufficiently large, on the copy board and the copy off to one side over it, it was an easy matter to make three exposures on the one negative by just moving the copy forward its own length for each successive exposure. This proves a quicker method than exposing part of the negative at a time by manipulating the dark slide and negative, or using masks, as it is easier of access and gives equally good results. A red glazed sheet is recommended, though black glazed will answer nearly as well. Matt or flat papers of either color, however, absorb too much light to give the best results, especially on slight reductions where long exposures are necessary. After drying, the negative was stripped to the centre of the printing-glass and the glass covered with a sheet of tinfoil except where the negative had been stripped. A piece of zinc three times the size of the negative was then sensitised and marked off into three equal portions on the back, and the central portion exposed first, then each end in succession, which gave us the nine prints on one piece of metal, permitting all to be etched at one operation, a matter of economy both in negative-making and etching. This duplicate printing method will be found equally serviceable in making color plates where the drawing permits more than one to be made from the same negative. In fact, I have one of my printing-glasses painted black over one half its surface on which to strip negatives for two-color jobs. The advantage lies, of course, in the fact that color plates from one negative cannot fail to register, and, size permitting, as many prints as the negative will produce without injury to itself can be made and etched at one time."

FIG. 18.—See article, "Practice and Theory of Half-tone Etching."

Glucose Enamel Solution.—Though formulæ for enamel solutions are like the sand of the sea for multitude, *Camera Craft* courageously prints another. Like many of its predecessors it is "one of the best." Also it is used entirely by a large Chicago firm. It is:—Water, 10 oz.; bichromate of ammonia, 120 gr.; albumen, 1 oz.; glucose (estimate), 40 gr.; glue (ordinary Le Page's), 4 oz.

"Strong and weak negatives can be handled as they should be by giving a thick coat for strong and a thin coat for weak negatives. When developed, put into a solution of chromic acid, 22 gr.; water, 16 oz.; being careful to keep the solution in motion when plate is first placed in it. Leave in solution two or three minutes, then dry over a whirler after rinsing with water. Do not dry with alcohol. This enamel will keep almost indefinitely if corked up."

Digitized by Google

No. 128.—August, 1904.

THE PROCESS PHOTOGRAM AND ILLUSTRATOR.

THE PROCESS-MONGER.

The letter from a correspondent which appears on another page raises a point of large interest, not in photo-engraving only, but in all the technical crafts. Vendors of "secret" processes continue to find people to believe in them, for the process-monger is usually an astute man with a powerful gift of language. He knows that superstition is not dead in "process," or photography either, and he trades on his customers' ignorance of the literature of his own craft. For practically there are no secrets in "process." Any advance is nearly certain to be some small improvement on existing lines. One great instance to the contrary may be named—the "Rembrandt" photogravure process—but that is really more a matter of launching capital than anything else. With the money to buy the necessary plant, we believe the men could be found to work out that process, exactly like the half-tone process, which at one time was just as secret. But they will have a wealthy and powerful competitor in the Rembrandt Co., and since there can only be, after all, a very limited demand for insets such as these photogravures, this process has up to now remained the monopoly of this firm.

The process pure and simple, however—the all-important "formula" which has cost the years of research and the thousands of pounds!—is an easier thing to take round, and each new monger grows bolder in putting up the price. We would not be understood to dub the process-monger a rogue, or his process as invariably bogus. There have been men over here who have handled their business with fairness to their customers, and the process has proved genuine. On the other hand, a European who had sold a secret method extensively in the trade offered it to us for publication in these pages for less than the price of a suit of clothes. There is sound sense in our correspondent's suggestion that a firm, or several firms in concert—or the trade as a whole (Utopian dream)—should appoint someone to work out such processes for them in places of technical instruction. That such a course has been adopted only to a very slight extent is probably from

Digitized by Google

ignorance that such facilities existed. But if we remember aright, Mr. Newton, of the L.C.C. School of Photo-Engraving, on first assuming control at the school, notified his willingness to permit research, an offer of which, we learn from him, advantage has been taken by firms sending men to work out their own ideas, in at least four instances, some with successful results, and in others the work has proved so unpractical as not to be worth carrying on. In every case the people concerned have expressed their satisfaction at the facilities afforded.

In such cases the firm cannot, of course, keep the information obtained to themselves—as indeed they cannot when they buy it from the process-monger. Though institutions such as the Bolt Court School will take no special pains to make known the information, yet it would be the duty of the school to afford aid to any person qualified to receive it.

THE CARE OF SCREENS.

(Translated from *Zeitschrift für Reproduktionstechnik.*)

LENSES and screens are the most costly parts of the photo-engraver's outfit, and while the former are practically uninfluenced by time, the latter not infrequently suffer considerable alteration. Quite apart from losses of screens by sheer breakage there are other accidents which may befal. In the majority of cases the screen consists of two pieces of mirror glass cemented by a film of ordinary Canada balsam of appreciable thickness, this film becoming hard in course of time. Compared with the film of balsam between the glasses of a photographic lens, this film is not of a high degree of permanency. The glasses of the screen are not always so perfectly flat that the excess of balsam can be pressed out without considerable pressure; and as this must be done on account of the yellow color of the balsam, it not infrequently happens that the two glasses are cemented warm under strong pressure, and thus the screen acquires the tendency to return from the shape in which it is held by the cement to its original form. This explains the occurrence of "cement bubbles" between the glasses of a new screen. Such defects make their appearance with greater frequency the softer the film of cement in the screen and the warmer the place in which the screen is kept. In our experience, old screens are not liable to this defect, and can be subjected to a higher temperature without the phenomenon occurring. New screens, however, must be kept cool, with great care, and caution also observed not to lay strong pressure upon them, as the distortion thereby produced leads to the formation of bubbles between the glasses.

In cleaning a screen it is very easy to entirely ruin it. A single bad scratch renders the screen unfit for use, and even one or two slight ones seriously affect the results under certain conditions. In order to reduce the necessary cleaning to the minimum, it is chiefly necessary to protect the screen from dust as much as possible, and not to clean it in such a way as to render it attractive of particles of dust by electrical excitement. A screen polished in the usual way with dry *Joseph papier* becomes strongly electrified, and if left in the air for a few minutes, attracts enough dust to itself to cover its surface. The same thing, only to a still greater extent, takes place when the screen is cleaned with the oft-advised silk handkerchief. Hence the propriety of cleaning the screen while it is in a moist condition. In doing this it must not be forgotten that many detergents, especially alcohol, dissolve the resinous cement, and must therefore on no account remain in contact with the latter. That is why the following mode of procedure is

Digitized by Google

advised. The screen should never be cleaned whilst *in situ*, in the camera, nor whilst in the hand, but always in a proper screen case. The surface is first carefully dusted with a broad, flat camel-hair brush. Then a pad of linen, kept by itself clean and away from dust, is moistened with a few drops of alcohol, and when evenly moist led over the surface of the glass with gentle pressure. When it is seen that all particles of dirt have been removed in this way, the screen is cleaned up with another pad of soft linen, to which a trace of moisture is first imparted by breathing on it. It is taken across the glass slowly and with quite moderate pressure (the glass thus avoiding electrification), and is then ready for use. If tiny threads of linen adhere to the glass they are taken off, not by quickly and repeatedly going over with a camel-hair brush, but by brushing slowly and with some pressure, and applying the strokes side by side.

In the event of markings on a screen from which they cannot be removed as above described, *e.g.* in the common case of silver bath splashed on to the screen and drying with reduction of the silver to the metallic state, the glass is treated, before cleaning, with a linen pad very slightly moistened with 30 per cent. nitric acid. After this it is quickly polished with a similar pad moistened with ammonia, and then, as before, with the alcohol. Those who will observe the above precautions need never complain of scratches on a screen.

MIRROR SILVERING: A METHOD OF SECURING A THICK AND DRY DEPOSIT.

By Harold Hood.

In *The Process Photogram* for October, 1903, Dr. Miethe emphasises the fact that large prisms cause great loss of light, and, in addition, affect the sharpness of the image. The loss of definition is not so noticeable when the lens is being used upon copies to be considerably reduced, and, consequently, with short extension of bellows; but when a lens of, say, 20 in. equivalent focus is being worked at an actual focus of, say, 35 to 40 in., the effect of striæ within the great bulk of glass means an absolute impossibility to secure that crispness so essential to ninety per cent. of commercial reproduction. And, mark, if there be this defect of unequal density within any prism (not easily discoverable even after some use) the definition is bound to be impaired, be the "figuring" of the three surfaces never so perfectly finished. And, since the same eminent authority expresses the opinion that modern lenses (anastigmats, especially those of wide angle) should only be used with mirrors, when reversing, I shall not be thought old-fashioned in giving the routine of mirror-making which my firm has adopted during the past nine years.

The basis-formula of the following instructions is of considerable age, but appears to have been kept well out of sight, for some reason; perhaps its simplicity accounts for its obscurity. The details of applying it are innovations of my own, and result in a clean and brilliant coating of silver which may be built to such a thickness as to be quite opaque if desired. Mirrors coated in this way last longer than those by the universally known methods in which a deliquescent salt is used in reducing the silver, and, moreover, withstand considerably more polishing—to such an extent that the very particular person would be justified in keeping my "dry" mirror in use for at least a couple of months, while the unparticular operator would not blush for his negatives even after ten months' use of it, though the comfortable mean lies, of course, somewhere between the two.

Digitized by Google

Procedure.—Place the old mirror into a weak solution of nitric acid—say 5 per cent.—which immediately removes the silver. Rinse it a little, and then clean very thoroughly with a pledget of cotton-wool and a mixture of whiting and ammonia. Rouge will answer in place of whiting, or, as a last extreme, finest levigated pumice, first applied to a waste glass to crush down any possible grit. This cleaning is of the very utmost importance, as upon its thoroughness depends eventual success. Front, back, *and edges* must alike be left in a state above suspicion. The plate is then again flowed with weak acid, rinsed beneath the tap, then flowed back and front with distilled water, and kept immersed in a glass-covered dish of distilled water until the solutions are ready.

The depositing vessel is the next consideration, and it should be realised that unless most of the silver in the solution finds its way on to the face of the mirror it were cheaper that the glass should be sent to the professional mirror-maker. The best plan is to use a glass dish allowing of $\frac{1}{16}$ in. margin all round the mirror, inside. But such a glass dish is expensive, having to be made specially, there being no regular sizes near enough to 4 × 7 or 8 × 5 (usual mirror sizes). If too large a dish must perforce be used, the sides or ends should be filled up with sealing-wax. Four strips of glass are temporarily bound together with two or three turns of string so as to form a hollow square. The side pieces are $\frac{1}{8}$ in. longer outside and the end pieces $\frac{1}{8}$ in. wider than the mirror glass. This frame is placed in about the centre of the dish, moistened with glycerine, and the molten wax flowed outside of it to a depth of about three-quarters of an inch or more. For economy's sake, good "parcel wax" may be used, but best red sealing is safer. This wax frame may be used repeatedly, being cleaned prior to each silvering operation. It is the only special appliance necessary, and half an hour is a liberal time allowance for making it.

Silvering Solutions.

I.

Silver nitrate - - - -	160 gr.
Water (distilled) to - - - -	5 oz.
Liquor ammonia (·880) - - -	(see instructions).

II.

Tartrate of soda - - - -	42 gr.
Silver nitrate - - - -	7 „
Water (distilled) to - - - -	5 oz.

In the case of the reducing agent (Solution II.) the sodium tartrate is dissolved in a beaker which is then suspended over a Bunsen burner till boiling point is reached. If no boiling ring-stand is handy, the beaker may be suspended by a string passed once round the rim and looped. Having dissolved the 7 grains silver nitrate in a drachm of water, add this to the hot tartrate solution and continue to boil for about four minutes; when cold, filter, and set aside until the silver solution is ready for reduction and the mirror in position.

To the silver nitrate solution liquor ammonia ·880 is added, three or four minims at a time for the first few stirrings, afterwards one minim at a time, stirring between each lot. The dense precipitate first formed, gradually re-dissolves, and the addition of ammonia is continued until the solution is only of a light brown turbidity. It must not be clear, but a little of the precipitate allowed to remain. The respective solutions are then filtered twice

Digitized by Google

through double filter papers, using different papers for each solution, and, preferably, different funnels.

One half of each solution (2½ oz.) is now taken and mixed together. The depositing dish obtains a final rinse out with distilled water, and the mirror is flooded with a little rectified alcohol, applied twice and "whirled" off each time between fingers and thumb, after which it is placed in the bottom of the dish surrounded by the frame of wax. The mixing of the two solutions can be done rapidly by pouring twice or thrice from one clean vessel to another, and back.

The depositing dish may rest on any fairly level place, and the mixed solution should be poured on and off again twice before the dish is allowed to rest. This minimises streaks and "oyster" markings. Allow to rest, covered with a clean card or glass, for six minutes; then pour off into a clean vessel, take out the mirror from the depositing dish and rinse under the tap, rubbing the silvering with a light pledget of non-absorbent cotton-wool, using hardly the weight even of the cotton-wool. This must all be very rapidly done, since the deposition of the silver is proceeding apace and must not be wasted. The mirror is rinsed again back and front with distilled water and returned to the dish, the solution being put in again as before. The mirror rests here for a further fourteen minutes, after which it is removed again, rinsed and rubbed with cotton-wool.

Further immersion in the depositing solution already used would be to the detriment of the finished mirror, since there is thrown down a dirty brown precipitate which I find affects the coating through its whole thickness, and is proof against all attempts at polishing.

If the silver coating is not deemed opaque enough (hold it in front of a gas flame in order to judge opacity), mix the other 2½ oz. each of the silver and reducing solution and proceed again, exactly as before. If reasonable care has been observed a silver film of absolute opacity will be produced. This (after a final delicate rubbing under the tap with cotton-wool) is flooded with more distilled water and rectified alcohol, and fanned dry, resting with one edge on clean blotting paper. Polishing is done in the ordinary way with warmed rouge on the warm mirror, making rapid circles with lightest pressure, going uniformly over the whole surface. A good test for perfect deposition and polishing is to stand with back to the source of light, looking at one's own reflection. In this position the mirror's surface should be practically invisible. Any haze whatever means so much of a fog-producing element, detrimental to clear results in the finished work, and making the shadow dots (in half-tone) unduly strong.

PRACTICAL NOTES.

By J. H. Moger.

Carbon Three-Color.

REGARDING the reference to the absence of three-color carbon in England in your contributor's notice of the Paris Exhibition, I think it can be explained on two grounds. First, there is no one at present actively pushing a reliable three-color tissue; secondly, because at first sight there do not exist with the carbon process the possibilities of correction that there are in the other three-color methods. Yet corrections can be made quite easily, if regard is had from the first to the fact that they may probably be needed.

The negatives should be well exposed and fully developed, the carbon prints then rather under than over-printed. A piece of glass should be

Digitized by Google

thoroughly talced and coated with flexible collodion and the carbon positive developed by this—a simple operation, familiar to carbon workers. The development should be full, so that the images should be rather too weak than too strong. If any parts show themselves at this stage too strong in color, they can be locally reduced by allowing hotter water to impinge on these places, or developing with a brush dipped in very hot water, or even with a little weak ammonia.

The prints are then allowed to dry, and are stripped from the glass. They can then be superposed. If any color then is too weak, it is said to be easy to strengthen it by placing in a dye bath if general strengthening is required, or putting the dye on locally with a brush if the coloring is only at fault in parts.

The best dye baths are weak solutions of:—Brilliant yellow for the yellow; erythrosin for the red; fast green, blue shade for the blue.

If after strengthening the weak print one color is still markedly too strong, then it had better be replaced by another print in which the development has been carried further.

After the prints are properly corrected, the final superposition on a simple white support is accomplished by the aid of 3 per cent. solution of gelatine.

The Deep Etching of Half-Tones.

With regard to the excellent series of articles on etching you have translated from *Klimsch's Jahrbuch*, there is one point which in the English practice is generally omitted, viz., the deep etching; and as the custom of using fine screens extends, so the necessity for deep etching will finally disappear. Indeed, it is difficult to see in the example printed on p. 104, that there is any greater difference from the deep etching than there would have been had the plate been merely rough etched a little longer.

In rolling up for deep etching, either the half-tones are filled in or they are not. If they are filled in, then there may be, and generally is, a jumpiness shown between the deeper and lighter tones. On the other hand, if the top of the dot is only just covered, then the effect is exactly the same as though the first etching had been continued a little longer, so that the time spent in rolling up has been wasted. When it comes to screens so fine as 175 and beyond, it does not seem probable that any extra deepening got after rolling up can be of much service, since the utmost depth must need extremely careful printing, and sufficient depth for such printing can certainly be attained in the rough etching; if it is not, then either the negative-maker or the etcher is at fault.

ROTARY INTAGLIO PRINTING.

A PATENT for the preparation of cylindrical intaglio plates for printing on paper or other material has been granted to G. F. M'Indoe, 37 Bellevue Avenue, Boston, U.S.A., and J. W. M'Indoe, 67 Bowdoin Avenue, Boston, U.S.A. (Eng. patent, No. 4,206, 1904). The process is described as for the reproduction of figured and plain textile fabrics, and the objects and methods of the patentees is thus set forth in the English specification:—

"The object of the invention is the production upon a cylindrical surface of an intaglio printing form, on which shall be reproduced a representation of the surface, including figured and plain portions of a selected piece of textile fabric, or other flexible material, from which an exact representation

Digitized by Google

of the fabric may be printed continuously upon the surface of a roll of paper or similar material; the ink or color on the print and in the depressions of the form representing the raised portions of the fabric, and the uninked portions of the print and form representing the depressions of the fabric, thereby producing a desirable and useful article of manufacture in large quantities at a small cost.

"In carrying out the above object, the metal cylinder upon which the printing form is to be developed is prepared by coating it with a substance which is sensitive to the rays of light, such as a sensitised solution of gelatine or other similar material; drying and coating; selecting the desired piece of textile fabric or other flexible material to serve as a basis, saturating this basis with a sizing, as a solution of glutinous material, drying this saturated basis by subjecting it to heat and pressure to remove wrinkles and harden it, and also to prevent the absorption thereby of any other substance that may be applied thereto later; securing this saturated and hardened basis in a fixed and extended position on a suitable supporting bed, having an elastic surface, which may be flat or cylindrical; applying in any suitable manner to the hardened basis a thin coating of a paste-like material which is impervious to the action of the actinic rays of light, as a dense printers' ink; then transferring the light-resisting coating from the surface of the basis to the sensitised coating on the cylinder; then exposing all parts of the periphery of the coated cylinder in succession to the concentrated actinic rays of light, whereby the uncovered portions of the sensitised coating are hardened and rendered insoluble by the action of water thereon; then washing off the light-resisting coating from the cylinder by means of turpentine, naphtha, or other solvent thereof which will not affect the sensitised coating; then removing by means of water the portions of the sensitised coating that have not been affected by the action thereon of the rays of light; then subjecting the cylinder to a sufficient degree of heat to render the remaining portions of the sensitised material on the cylinder acid-resisting; then subjecting the cylinder to a bath of suitable etching fluid to etch the uncovered portion of the cylinder; and then removing the remaining portions of the hardened sensitised coating from the cylinder by subjecting said cylinder to the action of a bath of a suitable solvent thereof, as a hot solution of potash.

"All treatment of the cylinder to be etched, from and including the applying thereto of the sensitised coating, to and including the removal therefrom of the unaffected portions of the sensitised material, must be done in a semi-dark room, or one into which no rays of actinic light are admitted.

"In order to have the two ends of the design on the fabric, if ornamented by figures, join properly on the cylinder, so that when continuous printing is done on a roll of paper there shall be no serious disfiguring breaks in the print, it is necessary that the circumference of the cylinder to be etched should correspond accurately to the length of one or more complete figures of the design, and to properly locate the light-resisting material on the cylinder, a thin sheet of material having a straight edge is used upon the coated fabric with its straight edge in a position that will be parallel to the axis of the cylinder; and at the proper or desired point in the design, and properly secured to said fabric, the same is passed beneath the cylinder, the thin sheet of material, which may be paper, preventing any transfer to the cylinder until the straight edge has reached a point directly beneath the axis of the cylinder, when the transfer will begin; and as the cylinder continues to revolve, and before it has completed one revolution, the straight-edged piece of paper is removed from the coated fabric, turned end for end, and placed upon the transferred coating on the cylinder with its

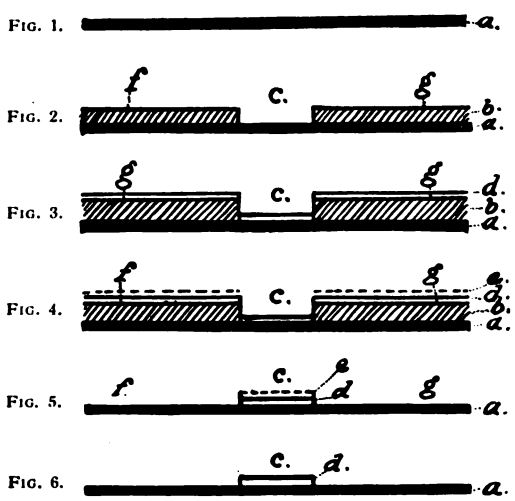
Digitized by Google

edge coinciding with the position it occupied at the start, whereby all overlapping of the light-resisting coating is prevented."

An article dealing with printing from intaglio plates on fabrics intended for decorative purposes will appear in *The Process Photogram* for September.

"GISALDRUCK."

In our April issue we published a translation of an article from *La Procédé* on certain alleged improvements in photography on aluminium, which were incorrectly attributed to M. Gisevius of Bogdan. The issue has reached Herr Gisevius, who now writes to inform us that Bogdan is his Christian name, his address, 29 Linkstrasse, Berlin, and that the process "Gisaldruck" is patented in England as well as in France. He draws our attention to certain distortions which the account of his process appears to have suffered in its twofold translation, and permits us to print the following brief modified account of it.



The process serves the purpose of obtaining on zinc, aluminium, or even glass, the image of a line-drawing by exposure to light, which image can be made available for printing. The improvement of the process consists in the fact that printing can be done without using typographic, lithographic or photo-lithographic methods.

Referring to the figures, the thick line *a* in fig. 1 shows the metal plate from which is to be printed. In fig. 2, *a* is the metal plate, *b* the light-sensitive film, and *c* the washed-out portions of this light-sensitive film. In fig. 3, *a*, *b*, *c* are as before, and *d*, a film of albumen flowed over the whole plate and covering the portion *c*. In fig. 4, *e* is an asphalt film, which is next applied; *f* and *g* the ground, which must be cleared by the subsequent etching. In fig. 5 this has been done, the metal plate retaining the asphalt and albumen films only in the portions *c*. In fig. 6 the metal plate retains only the albumen film at *c*.

The process is carried out as follows:—A metal plate *a* is ground in the usual way, so that it is given a uniform matt surface (fig. 1). It is then coated with a solution of bichromated gum, dried and exposed to light under the line-drawing, becoming insoluble in cold water in those portions of the ground *f* and *g* where it is not protected from light. In the portion *c*, representing the black lines of the drawing, the film remains soluble. After exposure the whole plate is washed in cold water, the soluble parts coming away, and leaving an image in the ground of insoluble gum (fig. 2).

At this stage a solution of bichromated albumen is flowed over it, dried, and a second exposure made to light (now without the line-drawing). By doing so the multiple film of bichromated gum and albumen becomes

Digitized by Google

insoluble even in fairly strong nitric acid, especially where the film, of bichromated albumen only, adheres to the metal—that is to say, in the portions representing the drawing (fig. 3).

The film of relatively insoluble bichromated albumen can be removed from the ground of the plate, since the acid penetrates the albumen and quickly attacks the underlying film of bichromated gum, loosening it, and detaching with it the film of bichromated albumen. In the portions *c*, that is, in the image, the albumen film, which has been rendered insoluble in the light, is not removed by the acid, but is now rendered incapable of retaining a greasy ink, applied to the plate. The image portions, however, should remain capable of taking up greasy ink, therefore the whole plate, which is now coated in the image portions with chromated albumen, and in the ground portions with chromated gum *plus* chromated albumen, is treated with a solution of asphalt. The asphalt solution protects the film of chromated albumen in the image portions *c* from the action of acid during etching, but it does not hinder the rapid and intimate action of the acid on the film of chromated gum *b* upon the ground of the drawing; the acid penetrates both asphalt and insoluble albumen film and attaches itself to the underlying film of gum (fig. 4). Thus, when the metal plate, which has been treated with asphalt, is put to etch, the total ground, made up of *f* and *g*, dissolves away, and there remains in the image portions only of the film of albumen, insoluble in acid, with the coating of asphalt *e* above it (fig. 5).

After the plate has been taken out of the etching bath it goes forward to the printer, who prepares it just like zincographic, algraphic or lithographic plates (fig. 6).

The special feature about the process is the application to the zinc or aluminium plate of the insoluble chromated albumen film.

CONTINENTAL PROGRESS.

A new Sensitiser for Tri-color Pigment Papers.

M. VAUCAMPS, writing in *Le Moniteur de la Photographie*, says:—Knowing how the rapidity of carbon tissue is increased by the addition of a proportion of silver bromide emulsion, I put in train a series of experiments with the object of producing a paper of similar properties, for use in tri-color work, without employing silver. The following formula has given me the best results:—

Potassium bichromate, pure - -	80 gm.	2 oz.,	360 gr.
Distilled water (warm) - - -	100 c.c.	35 ,,	
Sodium bicarbonate - - - -	2 gm.	31 gr.	
Potass bromide - - - -	1·5 ,,	23 ,,	

It is important to mix the constituents in this order and not to add one until the others are entirely dissolved. Moreover, the bicarbonate and bromide ought to be very accurately weighed, and the bath should be cooled to 10° C. (50° Fahr.) before use.

The sensitiveness is greatly increased by the use of this bath, the image can be better seen on the yellow ground, and the details are very much better rendered than with the old bath. If the proportion of bromide rises above 1·5 gm., the paper, after having dried, remains sticky and will adhere to the negative.

A Permanent Albumen-Sensitising Solution.

In *Photographische Korrespondenz* for May, Franz Novak refers to the 1:7 aqueous solution of albumen used in the American enamel process.

Digitized by Google

Such solutions can be kept for only a short time owing to decomposition of the albumen. By aid of an antiseptic, however, a permanent solution is obtainable, and a large bulk of the solution can be stocked for use as required.

A formula is:—Dry albumen (140 gm. = 4 oz. 410 gr.), water (980 c.c. = 35 oz.), and carbolic acid cryst. (2 gm. = 30 gr.). The carbolic acid is dissolved in the water before dissolving the albumen, and the whole then left for two or three hours for the albumen to soften. The mixture is then rubbed up with a pestle until all goes into solution, and the liquid is then filtered through cotton-wool. The stock solution, stored in a loosely corked flask, keeps for a month, and gives perfect results.

Orthochromatism without a Light-Filter.

In the course of a lengthy article on orthochromatics in *La Photographie Française*, Monsieur F. Montpillard refers to the method of cutting down blue sensitiveness of the plate without the aid of a light-filter. This is done by dyeing the sensitive film with a coloring matter without action on the silver bromide. Certain collodio-bromide emulsions can be rendered orthochromatic and at the same time capable of working without a screen by addition of eosin and ammonium picrate.*

Encouraged by these facts, L. Vidal suggested the use of this coloring matter for staining orthochromatised gelatino-bromide films.†

MM. A. Castellani and A. Alinari have shown from a long series of experiments that very promising results are obtained by using a bath made as follows on plates orthochromatised with erythrosin:—

Ammonium picrate - - - - - -	·0065 gm.
Dextrine - - - - - - - -	2·5 „
Distilled water - - - - - -	100 c.c.

A plate prepared in this bath shows, after drying and on exposure in the spectrum, remarkable sensitiveness to the yellow and green, whilst that to the blue and violet is greatly reduced.‡

Mono-bromfluoresceïn.

Dr. Eder refers in *Photographische Korrespondenz* to the green sensitising properties of mono-bromfluoresceïn in conjunction with collodion emulsion, and further recommends the addition of this dye to the ethyl-violet red sensitiser, as good screen negatives can then be made direct through the orange filter without difficulty. As a suitable quality of mono-bromfluoresceïn has not hitherto been readily obtainable, it may be noted that Dr. Eder uses the manufacture of Meister, Lucius & Brüning, sold at M. 2 per 10 gm. To those using mono-bromfluoresceïn for collodion emulsion, we may mention the remarkable way in which it scarcely affects the sensitiveness when first added to the emulsion. The latter, however, after keeping for a short time shows very great sensitiveness, although there is still the slight characteristic eosin gap on exposure to the spectrum. The addition of mono-bromfluoresceïn would seem to be recommended by Dr. Eder for a panchromatic plate. Ethyl-violet alone is sufficient for exposure through an orange screen, its sensitiveness extending right through the green.

---

* Dr. Albert, *Bulletin de la Société française de Photographie*, 1890, p. 43; J. Waterhouse, *Bulletin de la Société française de Photographie*, 1892, p. 400.

† *Bulletin de la Société française de Photographie*, 1891, 2nd series, t. vii., p. 163.

‡ *Bulletin de la Société photographique italienne*, 1904, p. 3.

Digitized by Google

COLLODION DRY PLATES: HOW TO MAKE THEM.

By A. J. Jarman.

The introduction of the new dyes with their great sensitising properties gives a new importance to the collodion dry plate, for which no doubt there is a market in process circles. The following article, by a well known American worker, in Wilson's Magazine, *may meanwhile serve the purposes of those in a position to prepare their own plates.*

THE first thing to be done is to provide a stock of clean new glass plates of the size required. Any alkaline solution in a warm state may be used for the preliminary cleaning. Half a pound of carbonate of soda in one gallon of hot water will answer the purpose. Wash the plates well in this solution so as to eliminate any grease or dirt; then place them, after rinsing, into a bath composed of either muriatic or sulphuric acid, 2 oz. to 30 of water, then take the plates and wash them under a stream of running water, having already at hand a solution to form a substratum, made up as follows:

Gelatine	50 gr.
Distilled water	60 oz.
Strong ammonia	2 drm.

Soak the gelatine in 30 oz. of water, and melt this by standing the containing vessel in hot water (a stoneware jar is suited to melt the gelatine in). When the gelatine is melted, stand it aside to cool down, then add the remaining 30 oz. of water, lastly the ammonia. Filter this solution, pour 4 oz. in a wide-mouthed bottle or a 6-oz. graduate, take one of the plates after it has been well rinsed under a tap, and while still wet pour over it a small quantity of this gelatine substratum. Drain off the excess, then place in a clean rack to dry. Prepare several dozen plates in this manner, and stick a small piece of gummed paper on the side of the plate that has not been gelatinised. The plates may be stored away from dust, ready for coating.

The following emulsion must be now prepared. Great care must be exercised in the various operations—the sensitising, washing, the emulsion, coating, and drying must all be performed in the dark room. The following may be prepared in ordinary light:—

Collodion.

Pyroxyline	80 gr.
Alcohol, sp. gr. 820	5 fl. oz.
Sulphuric ether, sp. gr. 720	8 fl. oz.
Bromide of ammonium	56 gr.
Bromide of cadmium	56 „
Castile soap	30 „

Shake these well until all are completely dissolved, then prepare in a small glass flask the following:—250 gr. of pure nitrate of silver; powdered alcohol, 2 oz.; distilled water, 2 drm.

When dissolved, place the collodion in a suitable amber-colored glass-stoppered bottle, repair to the dark room, pour a little of the hot silver solution into the collodion, shake the bottle well, continue this operation until all the silver solution has been added, allow to stand from ten to twelve hours, then add the following:—Sixty grains of the mixed bromides dissolved

Digitized by Google

in 1½ oz. of pure alcohol; add this to the sensitised emulsion; shake well; allow to stand one hour, then pour out this emulsion into a clean amber glass pan, or porcelain, 12 × 10 size; place this in a warm closet to evaporate, of course away from all actinic light. In two hours' time stir up the emulsion with a glass rod, then allow to stand for ten hours. Break up the emulsion into small pieces, scrape the emulsion from every part of the tray and place in a clean stoneware jar three parts filled with clean water; stir occasionally, then change the water three or four times.

When this has been completed, make up a solution of—

Bichromate of potash	100 gr.
Distilled water	12 oz.

Pour off the water from the emulsion and pour in the bichromate solution. Let the shreds of emulsion remain in this for one hour; then wash well again for one hour. The shreds of emulsion may now be laid out upon clean blotting paper and well pressed to abstract as much water as possible, then laid in a clean tray to become completely dried.

As soon as the drying is complete the shreds must be weighed, a mixture of equal parts of ether and alcohol prepared, and twenty-four grains of the dried shreds added to each ounce of the ether mixture. When the solution is completed it must be filtered through absorbent cotton in a clean glass funnel, with a piece of glass plate placed on top to prevent the evaporation of the ether. When this is complete the sensitised emulsion is ready for use. It will keep well for about two months.

All being ready, take the plates that have been coated with the gelatine substratum, pour on some of the emulsion, allow it to flow completely over the plate, allow the excess of emulsion to flow back into the bottle, rock the plate sideways, backward and forward, then place in a clean rack and dry in a warm place. When they are dried they must be coated over with the following preservative:—

Distilled water	4 oz.
White gum arabic	60 gr.
Tannin	16 „

Dissolve and filter. Take the plates, wet the surface with distilled water, drain, and pour over the sensitised surface the above mixture; return the excess to the graduate without forming air bubbles; place in a rack to dry. The plates are then ready for use. They are best stored in grooved boxes, but they can be packed the same as ordinary gelatine dry plates.

The time of exposure will vary according to the light and size of diaphragm. Great latitude is permissible with these plates. It is better to expose well, because they are well under control in developing. The developing solution is made as follows:

A.

Protosulphate of iron	1½ oz.
Water	4½ „

B.

Potassium oxalate (neutral)	4 oz.
Water	12 „

Take 3½ fl. oz. of the B and pour into it 1 fl. oz. of the A. As soon as the plate has been exposed it may be developed by the above mixture. A 10 per cent. solution of potassium bromide must be kept at hand, so as to use a few drops in case of a long exposure. As soon as development is complete the plate may be fixed in a strong solution of hyposulphite of soda,

Digitized by Google

then carefully washed in running water. It will be advisable to wash the plates in clean water previous to development, so as to get rid of the trace of gum tannin preservative.

This process produces a plate that is a little slow in working. If a more rapid plate is desired, the washing in the bichromate solution must be omitted. The plates will then be 25 per cent. more rapid. When the emulsion has been treated with the bichromate, it may be used in a moist condition by simply coating the plate, and just as soon as the emulsion is set place the plate in the camera and make the exposure. For line and half-tone work this answers well, because the shadows remain very clear. A developer can be made for this special work as follows:

Distilled water (hot) - - - -	8 oz.
Hydroquinone - - - - -	40 gr.
Sulphite of soda - - - -	100 „
Allow the above to dissolve, then add—	
Carbonate of soda - - - -	120 gr.

Dissolve and filter, and when cold it is ready for use. A few drops of the usual bromide solution may be required, but good density may usually be obtained by this developer without resort to intensification. Fix in strong hyposulphite of soda solution, wash the plate for half a minute, then stand aside to dry.

For all ordinary purposes these collodion plates must be varnished with a clear, hard spirit varnish, procurable at any photographic wholesale dealers.

Current Topics

Lithography and Process Work formed an important section of the recent exhibition of students' work at the Liverpool Technical Schools. The teacher of these subjects, Mr. J. Goodman, is to be congratulated on the standard and variety of his students' work.

The Marshall Engraving Co. has moved its City office from St. Bride Street to 78 Fleet Street.

An Exhibition of photo-engravings in monochrome and color will be held in the Victoria and Albert Museum, South Kensington, in October. It is announced that allocations of space will very shortly be closed. It is to be hoped that British firms, especially those working tri-color, will support the promoters of the exhibition. The collection will include also photo-lithography and collotype.

"Victoria," the journal of illustrative technics issued from the factory of the Rockstroh and Schneider Nachf A.G. of Heidenau, Dresden, continues to demonstrate the effective methods of relief printing, and in its latest issue presents a handsome cover of the head of Gutenberg executed in this style and printed in gold bronze. The firm offers to send an example of this production, with other specimens of relief printing, to anyone interested.

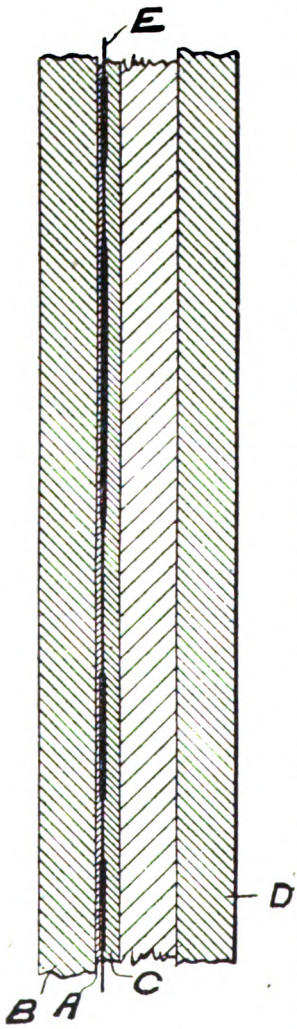
From Open to Enclosed Arc Lamps.—The manager of one of the largest houses in Chicago, writing to *Camera Craft*, says:—

"I have just made the change, and the improvement so exceeded my expectations that I make haste to acquaint others of it. I have been using Bogue lamps entirely, each one of which consumes about twenty-five ampères of current. The manufacturers made over the lamps to enclosed arc ones at an expense of $25 each, with the result that each lamp now consumes but eight ampères of current and about one pair of carbons a week. For half-tone negative-making I find the copy more evenly illuminated and the time of exposure reduced fifty per cent. For printing on metal the light gives off so little heat, compared with the open-arc ones, that it is possible to bring the printing-

Digitized by Google

frame much nearer the light. Then the arc is a violet-colored one, which reduces the time nearly fifty per cent. A further test of a double arc printing lamp with Kloro paper proved the light to be almost the equal of sunlight on a February day. So the saving of the operator's time will soon pay for the change to enclosed arc lamps."

The Arthur Cox Overlay.—The method of making the overlay for the printing of a half-tone block is given as follows in the patent specification of E. H. Bradbury (Eng. Patent, 11,114, 1903):—"A duplicate, or counterpart, of a block is made upon a flexible sheet of zinc or other suitable material. The duplicate can be obtained in one convenient manner by printing upon the face of a thin zinc or other sheet an ink impression from the block or subject with which it will be employed. The face of the sheet is then sprinkled over with an acid-resisting powder which adheres to the ink impression. After the superfluous powder has been removed, the sheet is submitted to the corrosive action of an etching bath until the impression stands out in relief upon the sheet to the required extent.



"The way in which the overlay is used is shown in the sectional figure. The thickness of the overlay A is shown considerably greater than is ordinarily employed in practice, to enable its function to be clearly represented. A may be secured upon the table B of a platen type printing machine, or it may be placed around the cylinder of a cylinder machine. The block C, with which the overlay is employed, is secured upon the movable bed D or other portion of the machine, in any ordinary manner and arranged to exactly register with the overlay. In such position the high parts of both printing block and overlay are coincident as shown at the section line; similarly the recessed or like parts of block and overlay are made to coincide.

"When the sheet of paper E to be printed upon is placed upon the overlay and the printing block is impressed upon the same, the paper will receive a maximum of support at the portions between the high parts of the block and overlay, *i.e.* at the portions where it is desired to produce the heaviest shades, and a minimum of support at the parts where it is desired to produce the lightest shades. Between these limits varying degrees of support will be given to the different parts of the sheet according to the depth of the recesses, and thus the required half-tone or like effects will be produced."

American Changes.—Mr. L. Rawsthorne has withdrawn from the Rawsthorne Engraving and Electrotyping Company of Pittsburg, Pa., and with his son and Mr. H. W. Dewsnapp has organised the Publicity Engraving Company, at 528 Third Avenue, in the same city.

The Hagopian Photo-Engraving Company of New York City were robbed of all their half-tone screens one night in May, an act that was particularly distressing in a busy time. However, an absent employee and the peculiar earmarks of the job were clues enough for the detectives, who within a short time recovered the screens in Jersey City and put the bold burglar behind the bars.

The Binner-Wells Company of Chicago have had a new building specially erected for them, facing on Grant Park, and overlooking Lake Michigan. An immense glass-roofed studio surmounts the eight-storey building. Both engraving and printing are carried on in the house, and all machinery is operated by individual motors.

Modern-day Book Illustration.—Notable examples of book illustration and decoration are displayed in the June issue of *The Printing Art*. While the camera is the basis of the illustrations in scientific and Nature books, they can be used to full advantage only in the hands of a sympathetic author and printers. This combination is shown to its best in the pages from "Getting Acquainted with the Trees," by J. Horace M'Farland, printer of *The Photo-Miniature*, who also did the photographing and printed the book, so that the complete work is representative of his varied talents. The illustrations in *The Printing Art* show a diversity of treatments—details of flower, foliage, and fruit, and landscape effects. Another notable feature of this same issue of *The Printing Art* is a remarkable showing of two-color engravings from illustrations by

Digitized by Google

prominent American illustrators. *The Printing Art* is issued by The University Press, Cambridge, Mass.

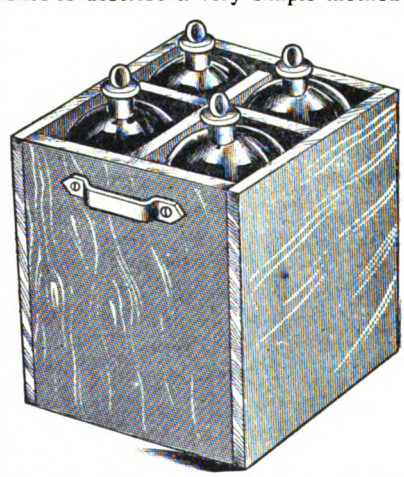
"Die Farbenphotographie" (Berlin: Gustav Schmidt; M. 2.50).—This volume, forming the 19th part of Herr Schmidt's encyclopædia of photography, is from the pen of Dr. König, whose name has been so much in prominence of late through his invention of the sensitising dyes Orthochrom T, Pinachrom, and Pinaverdol. There is less than one might have expected of the chemical constitution of those dyes. Indeed there is scarcely a word as to their derivation from quinoline, and for this reason the specialist-reader of trichromatic literature will feel disappointed. But Dr. König has evidently set himself not to talk of his own work, but to present a review of color methods, and this he does with very considerable thoroughness. There is a brief section devoted to the Lippmann, bleach-out and other processes, but the staple of the volume is concerned with tri-color—with filters, sensitisers, and printing colors. A colored chart contrasts the additive and subtractive methods, and should explain at a glance what the student of trichromy is at first at a loss to understand. The whole text is written with a view to practical requirements rather than to the scientific development of the subject. In other words, there is little about color-sensation curves and a good deal about sensitisers and chromoscopes and light filters. Readers of German may well possess themselves of the work.

The safe handling of Nitric Acid.—The handling of nitric acid—that is, with some reasonable assurance of safety from the deadly effect of its fumes—has long been a constant source of trouble to the photo-engraving craft. Carboys containing the acid, through careless handling or accident, break with annoying regularity, in various shops throughout the country, and serious consequences often result. The writer knows of some instances where death has been caused through accidents of this kind. The breakage of a carboy containing nitric acid not long ago at the Barnes-Crosby plant, followed by a similar case in Chattanooga, makes it plainly evident that extraordinary care should be exercised by those who have occasion daily to handle this poisonous acid.

No doubt there may be many concerns which have methods of handling this acid that reduce the danger to a minimum. If so, it is only just that the craft at large should be so informed. I believe the columns of the *Criterion* are open to any articles that have for their object the betterment of photo-engraving interests.

It is with this idea in view that the writer wishes to describe a very simple method which is employed in handling nitric acid at the Gatchel & Manning plant in Philadelphia.

The annexed illustration gives a fair idea of this method.



An ordinary wooden box, made of inch boards, about 13 in. square by 15 in. deep, is divided into four compartments. Four glass-stoppered bottles, each containing seven pounds of nitric acid, fit snugly in these spaces, and are delivered in this shape by the chemical supply houses.

The idea is simplicity itself. It does away with the drawing-off of the acid from the carboy, thus removing the danger of a spill.

It is convenient for the etcher too. The bottle of acid takes the place of the obsolete glass pitcher, which, filled with acid, formerly stood at the side of the etching tub, emitting its share of poisonous fumes, as though the poor etcher didn't get enough of that sort of thing in bending over his tub. This way the etcher pours from the bottle as occasion demands, returns the stopper and stands the bottle aside, where, should it happen to be accidentally upset, very little damage would be done.

These boxes are compact and strong, are easily handled, and do not take up much space.

If these few remarks are of value to any one the object of the article will have been attained. The information is gratis, and much labor, expense and trouble may be saved by any concern which will follow these suggestions.—Louis A. Schwartz, in *The Plate-Maker's Criterion*.

Time-development of Tri-color Negatives.—*Le Procédé* calls attention to the importance of controlling the development of the three color-sensation negatives by a factorial method such as that of Mr. Watkins. The time of development should not be left to the fancy of the operator, but based on arithmetical methods which will ensure the process taking place with automatic regularity. As *Le Procédé* is careful to point out, this system does not mean the exclusion of the operator's control over the density of the

Digitized by Google

negative—whether great or small. It simply provides for the repetition of certain working methods without the aid of the operator's ocular judgment.

In working by "time" a little scale of tints—from black to white—is pinned beside the copy. In development, a note is made of the time which elapses between pouring on the developer and the appearance of the white tone of the scale. This time multiplied by the developer factor (which is determined once and for all) gives the total time of development. When working from transparencies on glass, the development of the three-screen negatives is based on the appearance of the black tone of the scale.

A vertical tank is recommended for the time development of three-color negatives, and a special form of tank, holding only a few plates and therefore requiring no immense bulk of developer, has been designed by M. Délécaille of Hem.

Penrose & Co.'s staff had their tenth annual outing on Saturday, July 9th, in gloriously fine weather, the rendezvous being the charming riverside resort of Chertsey, which was reached by train in good time in the morning, enabling the party to disport themselves on the river and in other ways until the hour for dinner, which was provided at the Cricketers' Hotel, and proved an excellent spread. The number present indicates the immense progress made by the firm, it being stated on the programme that the

staff in 1894 consisted of four, whilst in the present year it totals 114. Mr. A. W. Penrose presided, and Mr. W. Gamble occupied the vice-chair. The toast of "The Firm" was proposed by Mr. E. A. Swain in a happy speech, which revealed the cordial relations existing between the firm and its employees. Mr. Penrose and Mr. Gamble responded in terms which showed that the policy of the firm was a forward and vigorous one, and that it was their desire to inspire the staff with enthusiasm for the welfare of the business. The afternoon was spent in athletic sports, for which handsome prizes were awarded. The most interesting event was the tug-of-war, which resulted in the factory defeating both warehouse and electrical department, the latter being holders of the cup last year. A substantial tea concluded the formal proceedings of the day.

PROCESS-MONGERS AND TECHNICAL EDUCATION.

DEAR SIRS AND MADAM,—The "process-monger" is always with us, but just now he seems particularly active. Last year we had a vendor who in a few months was able to put some hundreds of pounds in his pocket, by the sale of a process which I believe no one of those who bought it can work, and now I hear of £1000 asked for one process, and another of £10,000 for the mere recipe of a simple solution.

What I should like to know, sir, is why, if manufacturers want a new process, they cannot send down to some of the public institutions teaching photo-engraving, such as the London County Council School of Photo-Engraving, and get the thing worked out there. Surely this would be cheaper in the long run, and at any rate a little more certain than paying large sums of money for processes which when secured cannot be worked by one's own staff. The drawback is that too much publicity might be given to any new idea, but it cannot be more so than is given by the "monger" who generally tries to sell his process to every single firm in the trade.

One would at all events get a clear idea of the practical difficulties involved, and could see, almost at no expense, if the thing was worth working out.

I enclose my card and beg to remain, yours faithfully, PROGRESS.

[We refer to this matter on the first page of this number.—EDS.]

Digitized by Google

No. 129.—September, 1904.

THE
PROCESS PHOTOGRAM
AND ILLUSTRATOR.

PHOTOGRAVURE ON TEXTILE FABRICS.

By Joseph Goodman,
Instructor in Process and Lithography at the Liverpool Technical School.

All efforts tending to stimulate the development of a branch of the photo-mechanical processes to productive commercial channels, hitherto much neglected, deserve fostering, not only for the intrinsic benefits to be derived from animating a dormant sphere of profit to the craft, but further as a relief in diverting capital and labor from the keenly contested and congested channels to less navigated ones, affording more freedom from collision, and extending the ramifications of the trade, as well as catering for the growing demand for art and ornamentation.

There are a host of industries in this country employing fabrics in one form or another as an essential part of the finished product, which product would secure an enhanced popularity from the public were they enriched with appropriate illustrations and attractive decorations, such, for instance, as ladies' fans, padded-top workboxes, fancy pincushions, plush-covered wall pockets with panelled illustration in front, letter racks, bordered souvenir views of seaside resorts, fabric panelled Xmas cards, miniature banners or flags, and handkerchief souvenirs on the occasion of Royal visits or great events, the foregoing being merely a few of the many opportunities for exploiting this class of work by the printing and process trades.

To encourage those who would like to give it a trial, we append the details of manipulation which have been adopted in the process classes of the Liverpool Technical School, after exhaustive experiment and practice, as being the simplest and easiest to work.

Close and finely woven material yield the best results for this work; one of the cheapest of this class of fabrics, possessing the finest lustre and finish, and extensively manufactured in a variety of pleasing tints, is that known by the name of "Roman Satin," costing 6¾d. per yard (draper's price); the yellow, pink, and light blue hues give the most satisfactory results. Unlike

Digitized by Google

printing pigments, though, the pinks are more permanent colors than the blues, which are the more fugitive.

The photogravure plate is prepared and etched in the usual manner, with the exception that the densest shadows are etched a trifle deeper than would be considered necessary for printing on paper, so as to maintain the equilibrium of contrasts when printed on the porous fabric. The photogravure ink is reduced down to a working consistency with boiled linseed oil, which not only enables it to lift better direct on the plain surface of the fabric web without any preliminary treatment, but it also oxidises the ink quickly, preventing it from spreading and impairing the lights. If a non-drying oil is used, such as sperm or olive oil, a tendency to filter out by capillary attraction on the surrounding plain area of the fabric is observed, producing an undesired double-tone effect (a litho double tone ink has been tried out of curiosity, and is now undergoing a test of exposure to light, etc.), although this property of double toning would be more appropriate and useful for half-tone printing surfaces in neutralising the screen effects. The plate, after inking up and cleaning, is re-warmed and then laid in position in the copper-plate press, and the fabric then placed on it, having been previously cut to size and very slightly and uniformly damped by means of a litho damp book; a sheet of blotting paper is next placed on top with a ply of collier's flannel following; the impression is then made by pulling it steadily through the press without stopping; after a few seconds' pause, the print can be removed from the plate, and the operations repeated for the next print.

The printing on silk is a little more difficult, as the sheen and resilience of the material resists the ink somewhat more than the cotton or linen fibres, but by modifying both the ink, damping, and heat, a richer and more transparent effect is obtained on it than can be secured on the cheaper materials.

Mercerised sateen is another cheap cotton material that gives a good effect. To obtain proper results on the black and dark hued materials such as black tillots, etc., a white ground must first be printed on with silver bronze or flake white, the outer edge of which should extend for about an eighth of an inch margin beyond the size of the design; the printing of the plate design is then done on this ground. If a multi-colored effect is desired, transparent tints can afterwards be worked on by means of lithography, the set-off outlines being easily obtained from the plate. Simultaneous multi-color printing from the plate direct is also available; but it is necessarily a slow and expensive process, yet for limited editions of the highest class of work this fascinating process yields unique results, and readily secures an assured market amongst art votaries.

Plates done also in the photo-aquatint method yield equally good results when printed on fabrics.

Some examples of this plate work on fabric were shown at the International Printing Exhibition, Agricultural Hall, London, amongst the specimens displayed by the students of the Liverpool Technical School, for which the judges awarded a bronze medal. They have since been on view at the Students' Exhibition held at the Technical School, Liverpool, where they were much admired by the many thousands of visitors.

The whole tendency of modern taste is for more and more pictorial effect, and it will be admitted, without bias, that we have ample room to extend our artistic and decorative fancies in almost every walk in life, being very much behind our Continental *confrères* in this respect; but by constantly urging its importance, we shall the sooner establish consciousness of our defects in the beautifying of our surroundings.

Digitized by Google

A NEW BRANCH OF "PROCESS."

Reproduction of Relief by a Photo-Mechanical Method.

WITHIN the last few years much experiment has been expended on the reproduction of objects in relief more or less closely approximating to that of the original. The methods of Selke and of Kutzbach (*The Process Photogram*, September, 1901, and those of Ohse, *The Process Photogram*, September, 1902) have been evolved up to the point of protection by patent, and in the case of Selke as far as apparently successful commercial exploitation. Nevertheless these methods are far from perfect, economically, for the production of the relief is not entirely done in a photo-mechanical manner, but requires a large proportion of hand work to round off the crude results given by the step-by-step methods. It has been estimated that in some cases a relief by the photographic method would cost more than a hand-made cast. For this, if for no other reason, the so-called "photo-sculpture" has attracted little interest among the photo-mechanical crafts, although a really practicable process offers a number of novel and profitable applications. So far, the earlier methods. We have now to describe a process which appears to be the first scientific and purely photo-mechanical method of relief reproduction. The inventor, Signor Carlo Baese, is a Florentine, and a student under Professor Miethe in the Charlottenburg Technische Hochschule. He has recently demonstrated his process before the London Camera Club and the Royal Photographic Society.

Briefly stated, Signor Baese's method is to produce a negative in which the relief of the object is represented by density of the silver deposit. To thus record relief in silver deposit, he resorts to a special method of lighting the object, and to a special method of preparing the negative. From the final negative a print is taken on a bichromated film of gelatine.

The illumination of the subject is done with an optical wedge by which the model can be lighted on every side, and with which also the lighting can be graded as desired. In this way the parts most in relief are most strongly illuminated: or the lighting can be reversed, the lower parts being most strongly lighted. The former plan gives a reproduction of relief as in the original: the latter a bas relief or *matrice en creux*. There is, however, the difficulty of color differences in the parts of the objects, and unless the effect of these differences can be removed, the proper effect of the relief cannot be obtained. Signor Baese therefore reverses his lighting—the parts previously most strongly illuminated now receiving least light—and makes a second negative. From one of these two negatives a positive transparency is made of sufficient strength to eliminate the effects of color without destroying the effects of relief.

The principle of the process is thus explained by Signor Baese in *Prometheus* (No. 759, May 4th, 1904), to which journal we are indebted for the diagrams 1, 2 and 3:—Let *a* (fig. 1) be the section of a body which is lighted sideways by the projection lantern in such a way that the light intensity increases from back to front. The point *c* would thus be brighter than *b*, and *b* brighter than *a* if the inclination of these parts of the body to the light were not very different. As it is, *a* appears brighter than *b*, and *a* and *c* are about equal; a film of bichromated gelatine swollen in proportion to the densities of the exposed plate produces a relief which does not correspond at

Digitized by Google

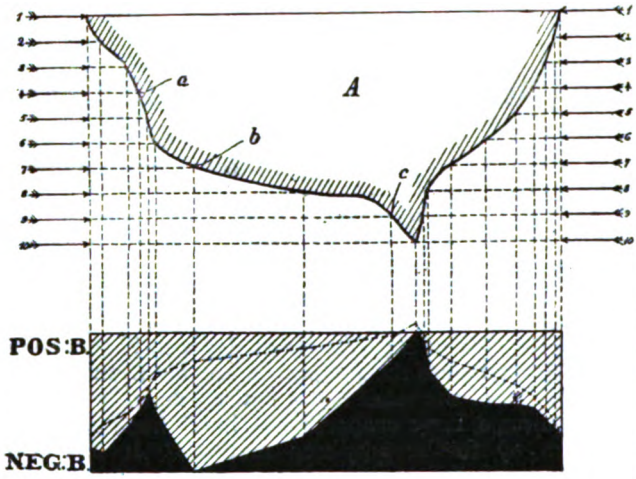


FIG. 1.

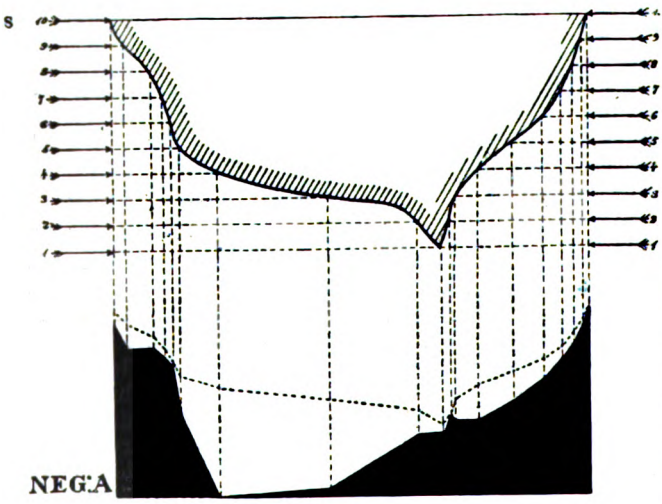


FIG. 2.

all with the body as shown in the curve of darkening B, which is based on the cosine of the angle at which the light falls. The problem before us is therefore to make the densities of the plate independent of the angle of the incident light, and at the same time to eliminate the effects of color and reflections from the body: in a word, to make the densities correspond strictly with the relief of the body. The solution of this apparently difficult problem is in fact a very simple one. A second negative is made with reversed lighting, which gives the density curve shown in fig. 2. A positive transparency is made at the same time from the first negative, and will therefore have a density curve shown in the positive curve B, fig. 1. Imagine now the negative A and the transparency B superimposed and viewed by transmitted light (fig. 3). The images will coincide, as the exposures were made from the same point of view. But the relative ratios of light and shade will be very different. We draw our density curves to scale and consider again point *a*. The plate A shows great density at this point: plate B only slight. The sum of the two is represented in the curve *Neg. A plus Pos. B* (fig. 3). Adopting the same construction for all the points, it is seen at once that the image reproduces, in density ratios, the relative elevations of the body and is completely independent of reflection and color (*e.g.* auburn hair or red lips), as also of the angle of the incident light. On taking a print from this plate, and causing the gelatine to swell, a reproduction of the actual relief is obtained.

The precise methods of Signor Baese may best be set forth in the shape of extracts from the patent specification (No. 5,381, 1902):—

A negative suitable for the purpose should have nothing in common with an ordinary negative except the outline. The different degrees of trans-

Digitized by Google

parency in this negative should express the depressions and prominences of the object, and nothing further; the highest points being marked by the greatest transparency and the lower portions by proportionately less transparency. No touching up of any kind should be required at the hand of the operator.

The system described below with reference to the accompanying drawings fulfils these conditions and produces a result which is mathematically correct, inasmuch as it is arrived at purely by scientific means. In this drawing—

Fig. 4 represents diagrams hereinbefore referred to.

Fig. 5 is a perspective view of the light filters.

Fig. 6 shows the method of illuminating and photographing the object to be reproduced.

Fig. 7 shows the section of a light filter (optical wedge) designed to divide the object into a number of parallel sections.

Fig. 8 illustrates the manner of employing the sections.

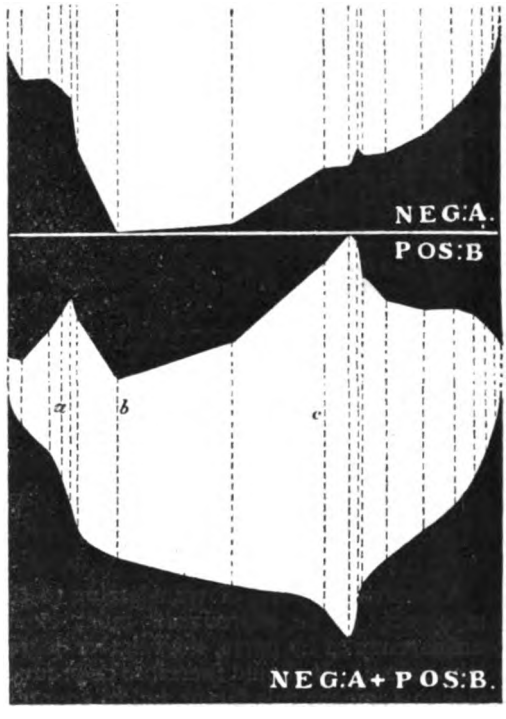


FIG 3.

The person or object *a* to be reproduced, is lighted by a system of lights *q q'*, placed around it in a circle in one and the same plane, and the camera, *r*, or *r'*, is so placed as to receive the representation of the object on lines at right angles to the centre thereof. By suitable means the light falling on the object is so distributed that the point nearest the camera receives the greatest quantity of light, whilst the more removed parts are proportionately less strongly illuminated. This graduation of the light is best obtained by causing it to pass through a medium so constructed as to range from the lowest to the highest degree of transparency. This medium, as represented in fig. 5, consists of two wedge-shaped vessels, *d e*, placed together, one of which contains a colored liquid and the other a colorless liquid. We will, for convenience, refer to this medium in future as the light-filter.

By this means the most prominent parts of the object are caused to exercise the strongest actinic action, and as a consequence will produce the darkest parts of the negative. Such a negative would, however, still be inadequate. In the first place, the various parts of the object being inclined at different angles they will be illuminated more or less intensely. For example, a surface at right angles to the rays of light will receive more light than the same unit of space in an inclined plane. Further, one color, even if on a more removed part of the object, might possibly possess greater actinic properties than the less removed colors.

Briefly stated, the graduations of light and shade in such a negative are determined by three factors:

1. Owing to the graduated illumination of the object the less prominent

Digitized by Google

parts receive a smaller, and the more prominent parts a greater, quantity of light, so that the latter possess greater actinic properties.

2. Any surface on which the light falls at right angles receives a maximum of light and possesses greater actinic properties than any inclined surface of the same size.

3. The various colors of the object exercise different actinic actions.

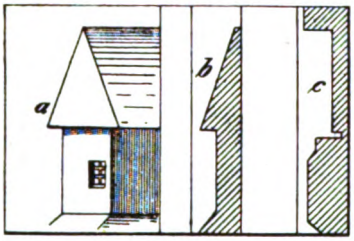


FIG. 4.

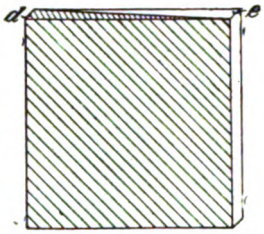
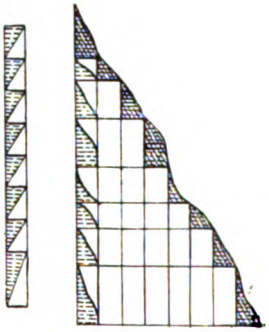


FIG. 5.



FIGS. 7 and 8.

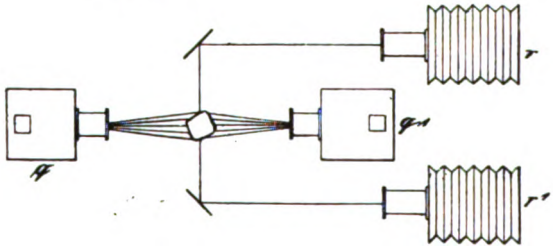


FIG. 6.

A negative capable of transferring to the sensitised gelatine the shape of the object to be reproduced must express, by the relative density or transparency of its parts, the relative degrees of prominence and depression of the object. It should therefore be produced entirely by the first factor. In order to augment this factor and to counterbalance the effects of the second and third factors, a second negative is required in which the light and shade is reversed, so that the parts which formerly received a maximum will in this negative receive a minimum of light, and *vice versâ*. Except that the first factor is reversed, the second negative is subject to the same considerations as the former one, inasmuch as both the relative position of the various surfaces, and the color of these surfaces, remain the same in both instances.

From one of these negatives, say from the first one, which I will call A, a positive transparency A^1 is made of sufficient intensity to neutralise the second and third factors when superposed on the reversed negative B. The neutralisation will be perfect, as the positive transparency A^1, as far as the second and third factors are concerned, may be regarded as a copy of B, and a negative and positive must necessarily neutralise each other. The effects of the first factor will, however, be better defined.

In further carrying out the invention I copy the superposed transparency A^1 and negative B on a prepared bichromated surface and cause the same to swell by treatment with some suitable liquid.

The positive or one of the negatives should be made on a film, or on a plate with detachable surface, so as to avoid the thickness of the glass plate between the negative and the layer of bichromate, and to avoid any indistinctness. In certain cases, however, this very indistinctness of outline may prove desirable from an artistic point of view.

The second picture may be taken in uniform light, so that the foremost

Digitized by Google

parts of the object will be illuminated to the same degree as the more removed parts. In this case the second and third factors will also be neutralised, whilst the first factor will remain unaltered.

The pictures can be taken in quick succession, as in the cinematograph. It is, moreover, easy, by eliminating all non-actinic rays, to reduce the time of the exposure without rendering the light unpleasant to the person photographed. The light-filters, shutter and apparatus for changing the plates can be worked by electricity, the circuits being opened and closed by clockwork.

An example of photo-sculpture by the Baese process.

If a greater relief as a whole is required, or a greater relief of certain parts than of others in a different plane, as, for instance, in a profile relief in which the shoulders are of secondary importance to the face and head, a stepped light-filter of the section shown in fig. 4 may be used. In this case the object may be divided into as many sections as there are scales of light, each of which comprises and yields a maximum and minimum relief. The number and size of these graduations of light is determined by the end in view. In other respects the process is identical with that employed for a single filter, two negatives being prepared, a positive from one of the negatives, and then the positive and other negative copied on a bichromated-gelatine surface and allowed to swell. As the negative pictures are taken at an angle (preferably at right angles) to the direction of the illuminating rays (fig. 6), the sections of the filters appear approximately as rings.

When the relief is obtained the rings are separated and their relative position is so shifted that from being degrees of a scale (one half of which is shown on the left of fig. 8) they become one continuous relief (as represented in fig. 8).

Those parts of the object in which the graduations of light are made more numerous will be in higher relief relatively to those parts in which the graduations are fewer. A sufficiently large number of graduations will therefore yield a relief of the same size as the object itself.

In this case it is advisable, when in the first picture some parts are covered by others, to convert the rings into a continuous spiral line, which is done by inclining all the light-filters equally at the same angle, and to take another exposure at a different angle, in order to be able to complete the bust.

Digitized by Google

Instead of distributing the light on the object to be reproduced in such a manner that the more prominent parts are the more strongly illuminated when preparing the photographic negative in conformity with the first factor above mentioned, the opposite distribution may be adopted—that is, the more prominent parts may be less strongly illuminated than the parts more removed.

In regard to the degree of relief obtainable by the process, Signor Baese states in *Photographische Chronik* that this may be to any extent and independent of the swelling properties of the gelatine. Experiments made by Dr. Stolze have shown that a height of relief of 1 cm. can be attained, and Dr. Stolze has also shown how a given relief may be doubled and how the process may be repeated a number of times. The process consists simply in immersing the relief in as strong a solution of gelatine as possible and allowing this cast also to swell. But as this process occupies considerable time, and further, cannot be pushed very far (or the fine details of the relief become choked), the sectional method already described is preferable.

Photo-sculpture by the Baese process.

For example, if 1 cm. is adopted for the relief of one section, and the half of the face be illuminated in four gradations, the relief will be 4 cm.—a suitable relief for reproduction of a human bust half size. The other half must be reproduced at the same time by another apparatus, and also photographically recorded. Such a portrait bust possesses a great sharpness in the details which a shallow relief exhibits. Thus we have at command a scale of reliefs from the shallowest to the deepest.

Such a process as this, which is certainly extremely simple and possesses many obvious uses in applied art, is deserving of the attentive study of photo-engravers. That it is something entirely out of the line of business as at present conducted is no drawback to it—photo-engraving can do with an annex or two so long as they are profitable; and though the process is patented, it is conceivable that those interested in it may want to grant licences for it, or in other ways place it in the trade. The process certainly seems right, and we might quote the statements of scientific men like Dr. Neuhauss, who pronounced it at once the first important step in photo-sculpture, and the only correct method.

Digitized by Google

PROCESS IN SOUTH AUSTRALIA—THE COMMONWEALTH AND NEW ZEALAND.

A CORRESPONDENT in Adelaide, S.A., writing to *The Illustrator and Process Review* as to the condition of the photo-engraving industry in Australia, says:—

Well, Mr. Editor, you think trade conditions in this country would be of interest. How is this? As to methods, as a rule they follow the English school. Cameras have adjustable screen gear, are mounted on solid stands fitted with castors so that they can be shifted to follow the various phases of the sun. The negative is generally reversed by the medium of a prism, wet collodion and a few dry plates being used. Zinc is the metal universally employed for half-tone process, people being quite satisfied with it, being cheap, simple and easy to work. Though conscious of the superior quality of copper, there is no demand for that metal. Fish-glue enamel is used for printing, dragon's blood for lines. Until lately the etching was of the most primitive kind, it being given to the junior apprentice to cut as fine as possible. The larger firms are now improving this department, and with them fine etching is the rule. New Zealand "Kauri" is the timber used for mounting.

South Australia.—There are four firms here, the largest employing, besides the proprietor, an operator and four apprentices. With regard to the work, there is plenty of room for improvement, but the price charged—5d. per square inch is the maximum, though most of it is done for less—won't allow of this. The price for half-tone here is rather lower than in London, yet we have to pay for apparatus and material about three times as much as the English list prices. Of course the consequence is boy labor, and process firms are very poor—no money to buy machinery, and apparatus is reduced to the minimum quantity. The electric light has lately been introduced, but daylight is so good and consistent that the electric arc is seldom requisitioned. Taking into consideration the various and serious disabilites the trade labors under, the work turned out is not so bad.

Melbourne, Victoria.—In America, I believe, when the very highest class work is required a Chicago firm is sought, that city being accredited to be in the van with regard to process.* Melbourne occupies a similar position here. There are several large firms which have full lines of power machinery, fine etching, vignetting and artistic finished blocks being practised—all on zinc. Some of the work is equal to that turned out in any part of the world; the ideas, however, are largely copied from America. Wages boards have been established—by Parliament—and employees get fair treatment. Weekly wage of an operator is fixed at £4, the others in proportion. The large firms complain of the small worker, who uses his home as a place of business, the back yard as a studio, with wife and family as assistants, and above all, cuts prices.

Sydney, New South Wales.—The parent state is somewhat behind Victoria, but some good men have opened up there lately and are going ahead.

In all the Australian States half-tone work—printing, too, as represented by the illustrated news—is on a par with the prosperity and commercial activity of the community, showing that wherever the demand is accompanied by the "necessary" it can always be supplied.

* This is a pretty compliment for Chicago that is well deserved. New York, Boston, Philadelphia and others should look to their laurels.

Digitized by Google

New Zealand, as evidenced by their weekly illustrateds, are far ahead of the Commonwealth; their etchings are good and beautifully printed, and there is great rivalry among the numerous newspaper staffs. Some of the best men are attracted to these islands. The scenery is very fine, and makes beautiful photograms. The artistic surroundings seem to have an influence on the residents—even the native Maoris being beautiful—though a late visitor maliciously adds, "in photograms"—and they go in strongly for decorative work—even to their features. A. F. J.

THE MANUFACTURE OF HALF-TONE SCREENS IN FRANCE.

(An abstract translation (from *The British and Colonial Printer*) of a report made by M. Lavache to the Société d'Encouragement pour l'Industrie Nationale.)

THOUGH the invention and first application of screens for photo-engraving are claimed by France there is no establishment for their manufacture in this country; those utilised are all of American or German make. In consequence of this state of affairs the "Société d'Encouragement pour l'Industrie Nationale" instituted a prize in the year 1902 with the object of encouraging manufacture of screens in France on an industrial scale. One of the difficulties met with is the lifting of the varnish by hydrofluoric acid at the time of treating the glass. It seems, however, that this difficulty can easily be overcome, for it is exactly the same phenomenon as that which occurs in etching metal plates with acids. To remedy this, as one is aware, the operation is divided into several stages. In fact, as the acid gradually bites into the surface of the plate, it has a tendency to attack the vertical edges of the furrow produced and raise the protective coating of bitumen covering the borders. It suffices to ink the surface, and then the ink running down the vertical side of the furrow prevents the acid from eating away the metal on the side. By inking several times it is possible by successive etchings to give the furrow sufficient depth without affecting the sides, and consequently without fear of the bitumen rising. By aid of a similar process, it seems, equally satisfactory results might be obtained in the manufacture of screens by treating the glass with hydrofluoric acid. Thanks to the courtesy of M. Leon Vidal, professor at the School of Decorative Arts, M. Lavache was able to examine a number of the current type of screens. He was astonished to note that their style of manufacture is entirely different from that described in various publications of recent date. In fact, when these screens are rubbed lightly with the damp finger the black lines fall away, thus producing little black filaments, which, on the evidence of a magnifying glass, must have been merely applied on the surface of the glass. The latter, perfectly transparent, had not been touched with a diamond nor etched with an acid. Thus there are two modes of manufacture, one by treating the glass with hydrofluoric acid, filling the hollows thus formed with black pigment, and the other by application of a black varnish to the glass, simply removing the varnish wherever white places are required. As numerous screens in current use and giving good results are made by this second method, M. A. Lavache subjected them to special study, as this particular process is much the simpler and less expensive of the two.

To meet the requirements of the subject one must have a varnish possessing the following properties:—

1. Perfect adhesion to the glass.

Digitized by Google

2. Readily fall away from places where the glass is to be bared, in producing an opening of exactly the required width.

3. Give a break or furrow with very clear edges without tearing or parting.

4. Have a very clean surface when dry.

5. Not change or soften under influence of heat when exposed to the electric arc.

6. Have a very uniform black coloration, and sufficiently intense not to allow passage of light.

After testing a great variety of varnishes into the composition of which gums or resins entered, and finding them too hard and with a tendency to crack or part, M. Lavache finally decided to utilise a simple solution of siccative linseed oil in a volatile solvent which he calls his "varnish." When the oil spread over the surface of the glass is converted by oxidation into a solid substance, a film is obtained of any desired thinness, perfectly dry, resisting great heat, and which during a certain time can be removed by a point in form of continuous shavings, thus giving a furrow with perfectly clean edges even under a microscope. The black pigment is ivory or black, very fine, well crushed with oil; the solvent is ether.

If ordinary crude linseed oil were used it would be difficult to obtain a perfectly uniform distribution of the black in the coat deposited on the surface of the glass. The too fluid oil, in fact, flows away quicker than the grains of black suspended in the oil, and a coat with granular aspect is obtained in which the black color is not continuous. To remedy this defect he employed linseed oil, thickened to a certain degree by heat or beating in the air, but yet quite soluble in the ordinary solvents. This thick oil is dissolved in ether, and a little spirit of turpentine added containing 1 per cent. of resinate of manganese, so as to obtain sufficiently rapid drying, then the amount of crushed black necessary to give an opaque black coat. The mixture is made homogeneous simply by shaking the bottle.

When the varnish is applied to the glass the ether evaporates and a coat remains formed by the very thick, very viscous oil which surrounds the black, and which can neither run on the glass nor separate from the black owing to its want of fluidity. This coat is allowed to dry in the air at the ordinary temperature, and then the glass is ready for the ruling machine. The thick oil employed was prepared by beating crude linseed oil in the air. Thus its density was raised from 0·935 to about 0·980. Finally it was heated at 100° C. during twenty-four hours to remove all trace of grease. A formula which gave excellent results is as follows:—

Thick linseed oil	1 part
Crushed peach black (in tube)	4 parts
Spirit of turpentine with 1 per cent. resinate of manganese	0·5 ,,
Ether	15 ,,

By pouring out this varnish like collodion a very thin uniform coat is obtained, almost at once, which dries in twenty-four hours. The operation of cutting the coat with a point is most satisfactory after exposure to the air for a minimum of forty-eight and a maximum of seventy-two hours. The experimenter succeeded in removing very even strips from the coat with a needle point, fixed firmly in a handle for greater convenience. The needle was drawn, at an incline of 45°, from front to back along a ruler, rather rapidly but with regularity. The edges of the cut thus made were perfectly clean under the microscope. It is probable that the very satisfactory results obtained by hand, in spite of all difficulties, can also be realised with the machine.

When a screen has been ruled it suffices to expose it to a stove temperature of 100° to 110° C. for four hours to give it a smooth surface,

Digitized by Google

soft to touch, and resisting the effects of rather severe rubbing. According to the opinions of competent persons, especially M. Vidal, intensity of color was amply sufficient and similar to that of the ordinary screens. Moreover, it is easy for anyone to vary the thickness of the coat and the intensity of coloration by changing the proportions given in above formula. An objection has been made to the use of so volatile a liquid as ether. When the liquid is poured on the plate the ether evaporates very rapidly at the moment when one slants the glass to drain off liquid, so that there may be a slight difference in thickness of the coat at top and bottom of the plate. This can often be prevented by placing the glass perfectly flat on a tournette, so as to distribute the liquid uniformly over all the surface by rapid rotary motion.

However, the rapid volatilisation of ether might perhaps be an obstacle to this idea. In this case it will suffice to replace ether by a less volatile solvent, *e.g.* benzene, or even tetrachloride of carbon, which presents no danger as regards ignition, employing the tournette to obtain uniformity of thickness in the coat. In addition to facility of work and cheapness, employment of a varnish for manufacture of ruled screens has another advantage. In the case of certain kinds of work one can draw alternate lines in both directions on the same glass to form a checker work. One can also trace successive lines of different widths at regular intervals, and thus produce a very complicated design. M. Lavache examined some specimens of lines on varnish, forming squares, lozenges, parallelograms, etc., with which an experienced artist can obtain very original effects. In the screens he ruled by hand he thus obtained figures with very acute angles excellently defined and without any tendency to fall away.

A final remark to be made is the great resistance of this varnish to the action of heat; it does not become detached, so that considerable economy can be realised.

The glasses utilised outside of France for the manufacture of screens are generally supplied by the Société Française de Saint Gobain. Ruling machines could easily be installed by skilled engineers, so it is to be hoped that manufacture will be commenced in France. Current screens are produced, chiefly by ruling a coat of varnish, and it was with a view to facilitate this work for French industry that M. Lavache described his researches made with the object of finding a varnish equal to that utilised in America.

Importance of Albumen Conditions.—As a general thing in mixing the sensitising solutions for line and half-tone work, and also enamel, any egg, except what must be classed as "any old egg," is made to do duty in the way of furnishing albumen. And another thing (says *Camera Craft*)—albumen is measured in a graduate by bulk instead of by weight as it should be. To say that good work cannot be got out under these conditions would be wrong, but better work could be produced, more surely and satisfactorily, if more attention were given to the selection and measuring of albumen. Many a streak of "bad luck" in the operating room might be traced to bad eggs. It is only a little work to test and properly measure albumen, but it will pay for itself many times over. In the first place, be sure the eggs are fresh. Reject any egg that will not sink quickly in a pan of cold water. Then measure your albumen with a scale. Do it accurately. When the formula calls for an ounce, use an ounce exactly. As albumen is slippery stuff to take out of a glass in small quantities, the best implement is a small syringe. Put in more than is wanted, and then remove the surplus until the scale registers exactly.

Digitized by Google

THE ETCHING OF PHOTOGRAVURE PLATES.

By Siegmund Gottlieb.

(Translated from *Zeitschrift für Reproduktionstechnik.*)

THERE are two methods of etching photogravure plates. One, in several baths of different strengths, and the other in a bath to which water is added from time to time. The principle of the methods is that the first bath, strong in ferric chloride, penetrates only in the shadow portions of the image where there is least gelatine, leaving the other parts unacted upon. In the subsequent weaker baths, the other tones, stage by stage, are etched. When using several baths, the tones of the picture are roughly divided into three, four or five lots according to the number of the baths (by comparing the plate with the transparency of the subject fixed before the operator in a window), and the plate left in each for the time necessary to bring out the respective tone as black on the bright red copper ground.

Great differences of opinion exist as to the two methods of using the bath or baths. The supporters of the dilution method maintain that one cannot divide the tones of a picture into four or five tones, and hence that etching in four or five distinct baths will not reproduce them. But I hold that with four or five baths, indeed with three only, exactly the same results can be obtained, and I work exclusively with a set of baths, as that method is preferable to the other in several ways. For example, the iron solutions can be prepared of the proper strength to avoid "devils" and other pests of the photogravure plate-maker; in etching with a bath constantly weakened by addition of water one must be prepared for unpleasant surprises. There is also the advantage that one can work much more quickly, as a number of plates can be etched together. So I will now describe the preparation of the set of baths and the working of this method.

Many persons regard the preliminary treatment of the etching bath as unnecessary. They declare the occurrence of "devils" to be unavoidably involved in photogravure plate-making: that "devils" suddenly arise and as suddenly cease without the operator being able to help himself. It is also affirmed that the preparation of the bath is prejudicial to the final result, which then lacks brilliance, etc. My conviction, however, is that those who take this view have never themselves prepared an etching bath; or if they have once done so, it has happened that their case has been confirmed. But it does not do to give up the method because a first experiment has proved a failure: the solution must be taken in hand again.

I will not maintain that the cause of "devils" and such-like defects in photogravure is solely and only to be found in the etching baths. There are other factors, the transfer, temperature, the copper, but the chief cause is the free acid in a bath which has not been "abgestumpft." Bad copper tends to "devils"; it frequently shows cloud-like markings which render the plate useless. A too hard transfer and too cold etching bath equally favor the production of "devils." It has happened to me that of ten plates nine have etched without the least trace of "devils," whilst one—the fifth in the series, strange to say—was covered with "devils." It cannot be said that the etching bath is the only cause.*

* For the views and theories of other workers on the much vexed and vexing question of "devils," see *The Process Photogram*, November, 1901, p. 172, and August, 1903, p. 120.—EDS.

Digitized by Google

Passing now to the preparation of the etching bath, the following relative proportions may be taken:—Ten kilos (22½ lbs.) of pure crystallised ferric chloride is placed in a white porcelain dish and 6 litres (5 quarts) of distilled water poured over it. When it has dissolved, the solution is poured into a large porcelain dish placed on a sand bath of proportionate dimensions. The sand bath is placed on the fire and the liquid brought to the boil. This must be done under a draught hood, in a stink-closet, or by an open window, as injurious vapors are given off during the operation. Now strong ammonia is added in the proportion of 80 to 100 c.c. (2¾–3½ oz.) for every kilo (2¼ lb.) of iron perchloride. The ammonia must be added only in very small doses and with constant stirring, or the liquid will spit badly. The whole is then left on the fire for two or three hours. Addition is then made of the finest copper shavings in the proportion of 20 grm. (300 gr.) per kilo of iron chloride, and the solution is then put on one side and stirred at intervals until the copper shavings have gone into solution.

The solution prepared as above is now divided off into four separate bottles, and distilled water added to each in sufficient quantity to bring the specific gravities to the proper figures when tested at 15° C. (60° F.). I use baths of 40°, 36°, 33° and 30° Baumé: often also a fifth bath of 28° Baumé; often, also, only three.

After each bath I rinse the plate for a few seconds in clean water. The baths prepared as above work well at the usual summer temperature of 18° C. (65° F.), and only very rarely has one or the other to be warmed or cooled. In the case of pictures with fine detail in the deepest shadows and also in the lights, it is often advisable to make the two first baths somewhat colder and the two second ones somewhat warmer, say 64° to 65° F. The division of the tones into the stages already mentioned should not be too rigidly enforced, and if it is seen that the etching liquid penetrates the gelatine film only slowly, it is best to go on to the next bath, as otherwise the parts already etched will be overdone and will appear as dark patches in the printed proof. On the other hand, transference to the next bath should not be premature, or light parts appear too light. Looking at the proof, it can be seen in which bath the plate has remained too long or too short a time, and a proper judgment of the time comes with practice.

I have noticed the case of plates afflicted with innumerable tiny sharp, deep points over the whole image in a manner different from the ordinary "devil," in that each point was not of a star-like formation, but had a rim to it resembling an eruption, as it were. It invariably occurred with hard transfer, and was, I think, to a minor extent, influenced by the copper. I added a small proportion of ammonia to the etching solution, heated it on a sand bath, used other copper and kept the transfer soft, and it did not show itself again.

The National Association of Photo-Engravers (according to *The Illustrator*) met in convention at St. Louis during the past month, and, according to reports, this convention was one of the most satisfactory in the history of the Association. The several sessions were held behind closed doors, and the members have been very reticent about disclosing any features of the business transacted. The following officers were elected for the coming year:—President, J. L. Shilling, Chicago; Vice-President, H. A. Tichell, Philadelphia; Treasurer, C. H. Brandon, Nashville; Secretary, Geo. H. Benedict, Chicago.

The approaching Convention of the International Photo-Engravers' Union promises to be the largest ever held by that body. It will convene on October 5, and St. Louis will then have lost the sulphurous heat that visitors complain of at the present time. The local Committee on Entertainment proclaim from the housetops that they are from Missouri, and not only intend to insist on being shown, but that they will show their visiting brothers the time of their life. They have been planning for a year, and it is hinted that they intend to make a second Louisiana Purchase and present it to their guests of 1904.

Digitized by Google

Current Topics

A Record Hentschel Outing.—It may not have been known to any of the two or three hundred of the Hentschel staff, nor possibly to their heads, that in going to Windsor for their outing, they were going from one plate-making establishment to another. The late Queen and the Prince Consort were enthusiastic amateur etchers, and Windsor Castle was the home in which their plates were bitten. It was possibly, and even probably, their interest in the etched plate, then newly in favor, which did much to dispossess lithography from its high estate of the "forties." History is somewhat repeating itself, in that it is now by another engraving process concerned with color that lithography is assailed.

A party, two or three hundred strong, foregathered at the White Hart, Windsor, and a four-in-hand and a large number of brakes bowled them along to Virginia Water. On the banks of that lovely shimmering expanse they were photographed. Then they drove back to Windsor, and determined either to storm the Castle in the absence of its august monarch, or to dine in the attempt. They dined.

Mr. Hentschel had put down one toast and one toastless speech: "the King" and "the firm," as to which latter he could virtually say, as holder of three-fourths of the shares, "the firm *c'est moi*." He mentioned that King Edward sent to the Kaiser a Hentschel colortype of his own portrait. It was signed and sent as a Xmas card. Obviously the King thought highly of it. And so, too, the Prince and Princess of Wales were very complimentary when they lately visited *The Graphic* office, and there were shown incidentally some of the negatives and plates and color proofs of most modern process engraving. (The company appreciated the compliment, knowing how much work their firm does for *The Graphic*.) Speaking of the firm, Mr. Hentschel recalled the first order, done, as it happened, for Cassell's in May 1887. The first week's wages were £8 9s. They were now many hundreds of pounds. He was glad that 130 of them had shares in the concern; and glad, too, that there were some with him who had been with him from the first. Mr. Hayward, now manager, came to him in November 1887. (We may say, parenthetically, that it is the Hentschel practice to try by all means to retain apprentices, and that the vast majority of apprentices are now serving the firm.) Again, there were very tempting inducements at times held out to men to leave his employ. He never wished to stand between a man and a "rise," but his own policy was to pay the best sums he could afford, and attach to that a virtual guarantee of permanence, so long as all went well. As they knew he was practical, he felt he might call on them to do or endure anything he was ready to do or endure himself; but as one who had been through the mill, he had a feeling for all who had irksome tasks. The heat wave had been irksome, and the colortype works had therefore been opened at five a.m., the ordinary day closing at noon. He wished all trades would start earlier and close earlier—(applause). Well, he would take the hint and see if anything more could be done in that matter.

The party enjoyed themselves on the water, and variously they did "take" Windsor Castle in their perambulations, but decided not to bring it away; concluding, like true artists, that it looked best where it was.

The Largest Process House.—Carl Hentschel, taking up a question of *The Inland Printer*, writes:—"I think I may fairly claim to have more hands under my direct control than any other process firm in the world. At the present moment I am employing some four hundred hands, or to be quite exact, 382; but as we are still building further studios, which we hope to have finished in a few months, the present number of our hands will be increased to four hundred."

Dr. Albert's Tri-Color Process.—With pardonable curiosity, photo-engravers may await further details of the Albert process, a description of which we gave in August, 1901. We are not aware of any more facts having been published in regard to the process, but now *The British Printer* says:—

"Color printers will watch the development of the citochrome process with the closest interest. As demonstrated by the firm of Dr. E. Albert & Co., Berlin, blocks are so prepared that the colors may be printed wet upon one another, either on one machine or on three or four machines. We have not seen the process in actual operation, but samples forwarded are certainly most admirable specimens of three-color and four-color production. We may at an early date show as an inset a citochrome print.

"A citochrome press invented by Dr. Albert is designed for printing three to four colors at one operation. One of these machines will shortly be in operation at Munich.

"Equally interesting to letterpress color printers is the information that a perfect electro is now assured—such is the claim. It is asserted that the new Albert electro is identical with the original block; in fact, register is to be guaranteed. A correspondent

Digitized by Google

testifies to the accuracy of these statements. He instances that a run of color work utilising Albert electros with the ordinary electros proved without doubt the entire supremacy of the former. Those who are curious as to the why and the wherefore may either await the result of our own tests later, or make inquiries for themselves addressed to the firm at Berlin."

"Die Chromolithographie."—The large work—indeed the standard one on its subject—by Friedrich Hesse, is now being issued in ten parts at M1.50 each by Herr Knapp of Halle. This second edition gives the author the opportunity to revise the subject in the direction of recent developments, and hence aluminium printing will form an important part of the contents. Part I. prepares the way for the subject proper by considering materials and appliances. It contains an example each of chromo-litho and photo-litho. We commend Herr Hesse's work to illustrators: it will probably sustain the author's reputation, and if it does that it will be the most exhaustive and authoritative treatise on the subject.

Dr. Miethe's Color Methods are detailed in a very precise manner in *Dreifarben Photographie nach der Natur* (Halle: Knapp; M2.50). We are glad that Dr. Miethe has seen fit to bring together an account of the work on which he and his colleagues at Charlottenburg have been engaged for the last few years. The chief value of the book lies in the direct instruction it gives in tri-color work by the additive and subtractive methods. It is pre-eminently a practical guide on the color-sensitising of plates, on the adjustment of filters, on exposure, development and printing. More might have been said on filter-making, which is very scantily treated, and though Dr. Miethe has not worked out any methods of his own in the making of tri-color transparencies with three stained gelatine reliefs, he might nevertheless have given working details. For the rest, almost every line in the book treats of practical methods which have been worked out, simplified, or improved by Professor Miethe.

The Barnes Crosby Engraving Company of New York, St. Louis and Chicago, is advertising its history as an argument for efficiency and superiority.

1897. Established in Chicago—four employees.
1898. Incorporated and factory opened.
1899. Consolidated with A. Zeese & Co. and Aetna Engraving Company. Office and Art Department opened in St. Louis.
1900. Factory opened in St. Louis—eight employees.
1901. Plant of George J. Geselchap Company purchased and equipment combined with St. Louis establishment.
1902. Establishment opened in New York.
1903. Western Engraving Company of St. Louis purchased. Office and factory in St. Louis moved to present location, 214-216 Chestnut Street; floor space, 22,000 square feet.
1904. Chicago establishment moved May 1st to 215 Madison Street, fifth and sixth floors. Electric elevator service for these floors only. 30,000 square feet of floor space. Latest labor-saving machinery driven by individual motors. Twenty-four cameras. A completely equipped commercial photographic gallery. Largest skylight in Chicago.

SUMMARY.—Total number employed at art work and photo-engraving, exclusive of any allied trade, 350—a greater number than is employed by any one other engraving concern in the United States. Offices and representatives in Detroit, Cleveland, Kansas City and Memphis.

NITRIC ACID.

DEAR SIRS AND MADAM,—It was interesting to read in your August number an excerpt from *The Plate-Makers' Criterion re* the handling of nitric acid and such dangerous chemicals. We having experienced some of the unfortunate results of careless handling, have for six years past used our best efforts to advise our friends that by taking all dangerous liquids in bottles and boxes they guard themselves, their employees, and us against the "serious consequences" of which Mr. Schwartz warns us. They have readily seen our advice was not for our personal advantage only, and at present quite 90 per cent. have deliveries of acid exactly in the manner advocated by the *Criterion*, so although it is but a small matter in the world of process, the Britisher evidently leads Cousin Jonathan this time.—Yours faithfully,

A. W. PENROSE & Co.

Digitized by Google

No. 130.—October, 1904.

THE PROCESS PHOTOGRAM AND ILLUSTRATOR.

DRY *versus* WET LIGHT-FILTERS.

Since the introduction of the three-color process, light-filters have come largely into use, and form one of the most important implements of the process-photographer. These color-filters have several forms:—

1. *Glass tanks*—or as the Continental workers, who were the first to introduce them, call them, "cuvettes"—consist of two optically flat pieces of white glass, of same thickness, either cut round or square, and between them a glass ring, which may be best described as a horizontal section through a cylinder. The margins of this glass ring form each an absolute level surface, and are ground smoothly in order to keep the cementing which binds the ring to the glass plates. At one place in the ring is an opening, either square or round, cut either like a pyramidal or conical section, slanting inwards; or better still, two of such openings. These are closed by close-fitting indiarubber or glass stoppers. These openings serve for filling and removing the dye solution.

The glass tanks are very expensive, and it is for this reason mainly that they have come very little into use. If for three-color work only, one tank is at the disposal of the operator; the emptying and scrupulous cleaning and refilling of such a tank occupies much time. It is, therefore, necessary, for the purpose of having a reserve in case of some accident, to have two tanks at least, unless three tanks, each always for the same dye, can be obtained. The more tanks, however, the greater their individual price, as they ought all to be made from the same substance of glass, and of exactly the same thickness. Any variation must invariably result in a difference of size in the set of negatives. These tanks, with their comparative ease of altering the solutions when necessary, form the most convenient apparatus for the scientific and careful worker. One of the greatest advantages in their use is, that they can be used for aqueous as well as for spirituous solutions.

The solutions contained in these tanks have, however, often to be controlled and renewed, especially if continually left in these tanks, because they suffer not only from the transmitted light, but also from the varying temperature, and if a strong or saturated solution has been employed, most dyes are certain to crystallise on the glasses. These fluid color-filters are the easiest to prepare and to alter while being tested, an advantage which

Digitized by Google

places them high above the dry filters. Their heavy weight, however, when fitted in front of lens or prism, tells greatly; and with the weight of lens the prism or mirror is exercising a strain on the front of the camera, which has carefully to be controlled on this point.

2. *Square glass plates* to be used in front or behind the lens or prism. Two absolutely flat glass plates, of same size, are cut out of the same piece of glass. The dye or dyes are dissolved in alcohol or ether, or a mixture of both, according to the solubility of the dye, and added to collodion. Each plate is coated, as a wet plate is prepared, and after drying, the plates are examined by means of a spectroscope. When the desirable shade of color is obtained, they are warmed slowly on a hot plate. Some drops of Canada balsam are put on the two plates, and then they are pressed together in a rotating movement, under ever-increasing pressure, till the superfluous Canada balsam is squeezed out. Under some heavy weight the filter is left till dry.

In this way the three different color-filters are prepared, and to coat them evenly, without any air-bubbles, specks, dust-spots and other faults, is a very difficult matter. The filter which generally gives most trouble is the green, because the dyes used for it generally form a sediment. All filters change their color quickly, if not kept dark when not in use; and even there a fading of these very fugitive dyes can be noticed, as well as a crystallising effect which spoils their efficiency.

These filters can be used either in front or behind the lens or prism, and are fixed so close to it that no white light can pass except through the filter.

3. Much easier is the preparation of such square glass plates, if coated with gelatine like a collotype plate and dyed afterwards by soaking in a solution. The color will, however, appear darkened, because the gelatine film is not so transparent and thin as a collodion-film. Besides this, the gelatine forms a thicker margin all round the plate, and in this more dye is accumulated than in the centre. Also the use of these gelatine-filters is restricted to aqueous solutions of dyes.

The three kinds of light-filters above described are only for lenses which are corrected for chromatic aberration. Should they be used for others, the result, arising from the difference between optical and chromatic foci, would give one sharp and two unsharp negatives.

Therefore the employment of large light-filters is recommended, which are placed in front of and quite close to the photographic plate. Their preparation is naturally much more difficult than the preparation of the smaller ones described above, and they have often to be renewed, because on account of their size they are subjected to more accidents than the small ones.

Even tanks of such large sizes have been constructed, but they are very unpractical on account of their weight, leakage, and greater density of dye in the bottom part.

Every operator should prepare his own filters, especially as the color-filters which are for sale are mostly incorrect, and their glass is of inferior quality. At the present time, the operator knows the necessity of a spectroscope, and if once in possession of such an instrument, he will naturally prefer to improve on his filters, till he has reached the acme of perfection.

Digitized by Google

AN ETCHER'S NOTE BOOK.

By Arthur White.

(From *The Illustrator and Process Review*.)

THERE is a quick method for producing drawings or printed designs direct on to metal plates, without the aid of the camera, that is both practical and economical, and that also is a means for producing inverted prints from a negative. Presumably the method is not commonly known, and because when needed it will be found reliable and simple, there seems good reason to pass it on to some brother etcher who, it is hoped, will appreciate the information.

Any drawing, printed design or proof that is on paper sufficiently transparent to permit the passing of light, or that can be made translucent by rubbing it with castor oil, may be printed direct on metal by using the albumen ink process. The operations are conducted in the usual manner until after the development of the image, which, of course, will be inverted, the whites being black and the blacks white, but after obtaining a good print, which has been carefully developed to insure clean sharp lines, the plate is immersed for a brief moment in a weak nitric acid bath to simply stain the metal, not allowing it to remain longer than necessary for this purpose. Dry the plate thoroughly after this staining, and then, with a tuft of cotton dipped in machine oil, wipe off all the ink, afterwards using a clean bit of cotton to remove all the oil. Then roll up the clean plate with etching ink in the usual manner and develop the image by immersing the plate in an acid bath—water 16 oz., muriatic acid 1 oz. Allow it to rest for a couple of minutes before rubbing with cotton, and then use care in developing, and rub easily. The image will readily appear, after which wash the plate under the tap, dry it off, and proceed with the etching.

This same method may be used to obtain an inverted image when printing from a negative. It often happens that a design or type form is desired to appear in white upon a black ground, and usually it is necessary to first make a negative and from this negative a positive in order to print the inversion at first, but with the process herein described the second photographic operation, the making of a positive, is not necessary, and the resulting image is fully equal to it, if not superior.

The following enamel solution is a favorite with the writer, who finds it equally good for either copper or zinc:—

Make a stock solution of ammonium bichromate, 1 oz.; water, 16 oz. Of this stock solution sensitiser take 5 oz., diluting it with 16 oz. of water, in which has previously been dissolved 50 gr. of citrate of ammonia. To this is now added: Le Page's liquid glue 8 oz., albumen (egg) 2 oz. Thoroughly mix and then filter.

An excellent albumen solution for fine work on zinc is made up as follows: Water, 16 oz.; ammonium bichromate, 8 gr.; egg albumen, 2 oz.; nitric acid, C.P., 5 drops; ammonia conc. liq., 10 drops.

Digitized by Google

THE BOLT COURT SCHOOL.

THE prospectus and time-table for the 1904–5 session of the London County Council's School of Photo-Engraving and Lithography is now published, and can be obtained on application to the principal, Mr. A. J. Newton. The session opens on the day of appearance of this number of *The Process Photogram*, viz., September 26th.

The School is open to those who are genuinely engaged in business in any branch of the photo-mechanical, photographic designing, illustrative, lithographic, engraving, and printing crafts, and no provision whatever is made for amateurs.

The courses of practical instruction are arranged to suit the following craftsmen:—

Photo-engravers.—Line and screen negative making, etching, proving, tri-color work, photogravure, and preparation of originals for reproduction.

Photo-lithographers. — Negative making, photo-lithography, collotype (plate preparation, press and machine work), combinations of lithography and collotype.

Photographers.—Line and continuous tone negative making, printing, enlarging, transparency making.

Lithographers.—Lithography, map and plan drawing, transfer writing, drawing, design, lettering, photo-lithography.

Designers.—Design, drawing, lithography.

Draughtsmen.—Drawing, design, lettering. Pictorial composition.

The School is well equipped with the necessary appliances for study and practical work. It contains large studios for life and elementary drawing, design rooms, lithographic studio, lithographic press room, photographic studio with electric light installation, dark rooms, collotype preparation and printing room (with three presses), etching rooms, lecture room, etc.

Only those engaged in the trade are admitted. The inclusive fees are:—Session of from thirty to forty weeks, 10s. Those in receipt of less than 30s. weekly, 4s. 6d. a session. Trade apprentices, learners, and improvers (under twenty-one), admitted free. The photo-process department is open for day instruction, and it is to be hoped that still larger use of this opportunity for instruction will be made by those desirous of obtaining a thorough and comprehensive knowledge of illustration processes.

This session also sees a revival of the lectures which were delivered at Bolt Court some year or two ago. The following is the course, entrance to which is free on application to the Principal:—

Dec. 1st, 1904. W. Boutall, Esq.: "The Influence of Process Engraving upon the Art of Printing."

Dec. 8th. Snowden Ward, Esq.: "Press Illustrations, with Points about Copyright."

Dec. 15th. Major-General Waterhouse: "Making Illustrations in India."

Jan. 26th, 1905. A. G. Cooke, Esq.: "The Light and Power of Modern Illustration—Electricity."

Feb. 2nd. E. F. Strange, Esq.: "Lettering."

Feb. 9th. Frank Colebrooke, Esq.: "The Illustrator and the Advertiser."

Feb. 16th. J. A. Corey, Esq.: "Duplicate Plate Making — Modern Methods of Electrotyping and Stereotyping."

Feb. 23rd. R. W. Sindall, Esq., F.C.S.: "How Paper is Made."

March 2nd. Douglas Cockerell, Esq.: "The Making of a Book."

March 9th. J. J. Waddington, Esq.: "The Humors of Process Engraving."

Digitized by Google

March 16th. W. B. Dalton, Esq.: "Historic Study in relation to Modern Illustration."

March 23rd. C. T. Jacobi, Esq.: "The Printer and the Illustrator."

March 30th. C. G. Zander, Esq.: "Harmony and Contrast in Color Mixing"

April 6th. W. Strang, Esq.: "Etching and Engraving."

April 13th. Emery Walker, Esq.: "Printing as an Art."

THREE-LINE HALF-TONE.

The Schulze Screen.

MATTERS of practical no less than of historical interest occupy the pages of our contemporary *Zeitschrift für Reproduktionstechnik*, which has recently given prominence to a screen which in its principle is a reversion to methods suggested, if not worked, ten years ago. The present process, however, claims to be commercially as well as experimentally practicable, and in order to present these claims, we translate a portion of an article by the author from Heft 4 of the *Zeitschrift* for this year.

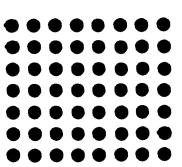


FIG. 1.

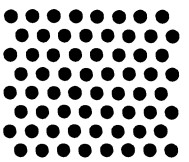


FIG. 2.

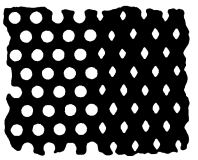


FIG. 3.

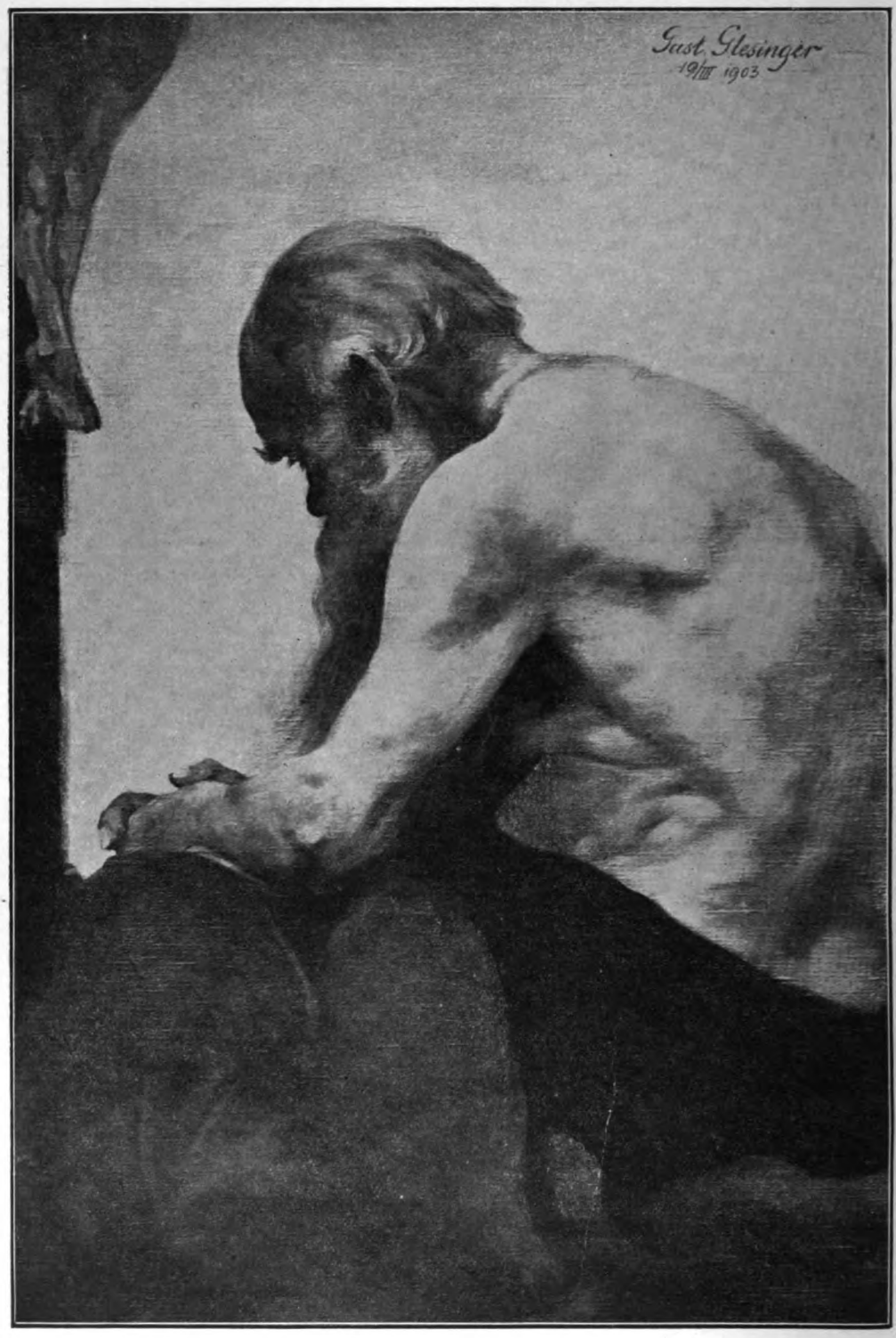
There are two kinds of regular dot-formation (says Herr Schulze): the dots occur in series which cross each other at right angles as in fig. 1; or the parallel series are in three different directions, inclined to each other at an angle of 60° (fig. 2). In a surface which contains dots all at an equal distance from one another, the second kind of arrangement gives 15½ per cent. more dots than the first, and this description of half-tone is therefore the most complete, because it affords the closest dot-arrangement. Its elements running in three directions, it is called three-line half-tone.

In the production of a dot by the ruled screen as ordinarily manufactured, the ideal arrangement of fig. 2 is not obtained, but the less advantageous form of fig. 1. It is this fact which chiefly accounts for the disfavor with which half-tone is regarded by many artists. The series of lines of dots crossing each other at right angles break up the picture in a manner harsh and inartistic.

To avoid this defect, fine screens have been used, or screens of irregular grain with their inherent drawbacks. A more proper remedy is a screen which will give a three-line half-tone. This may be of the form of a negative from fig. 2—*i.e.* with circular openings. Such a screen was patented by Rob Schoor, the chromo-lithographer of Gera, in 1894 (Eng. Patent No. 4,123), but has never come into use, chiefly because the method of preparation was a photographic one and the screens could not in the least compete with the commercial etched screens. The attempt has also been made to superimpose three parallel line screens so as to form three-cornered or six-cornered openings, but without success.

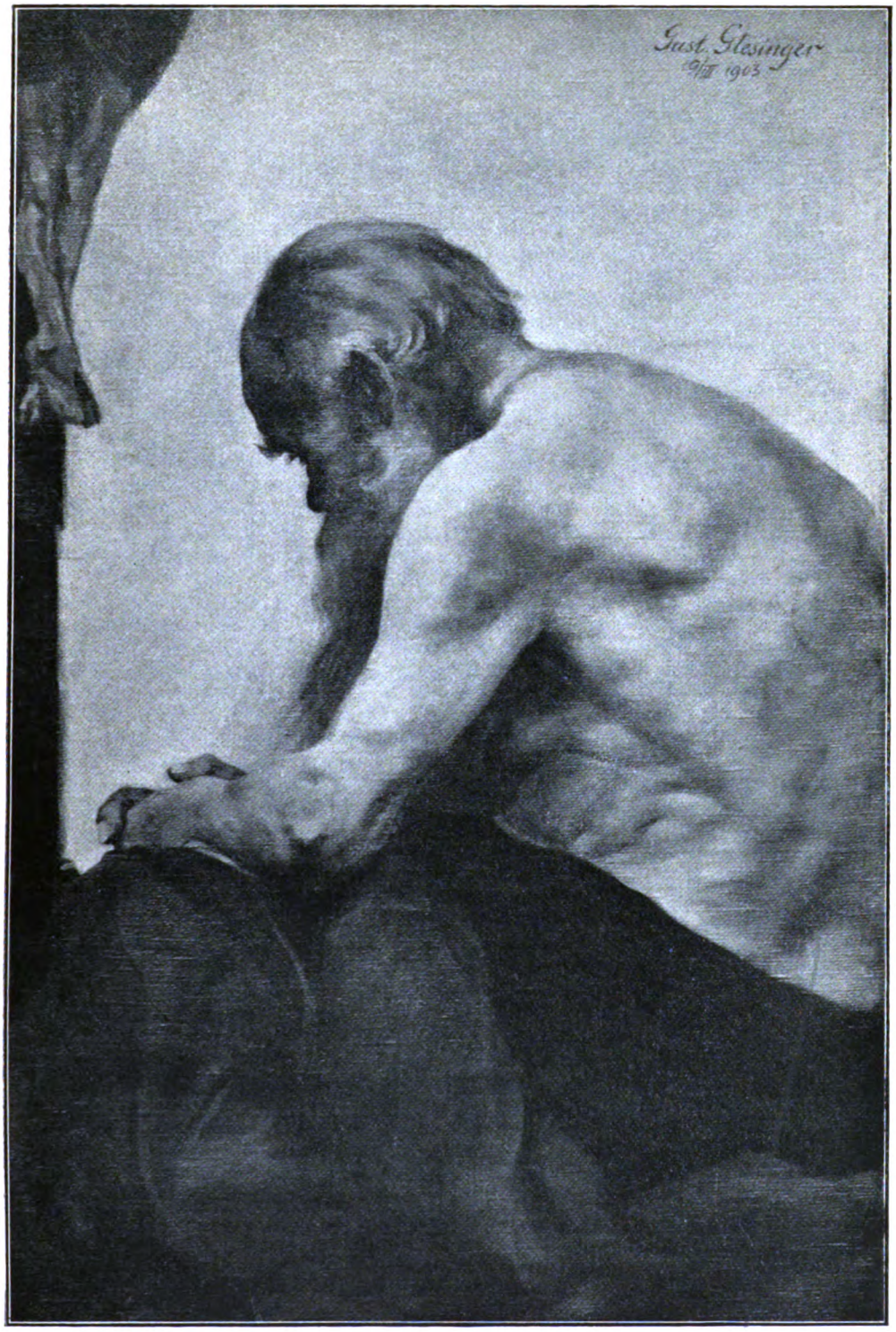
In the course of researches on the influence of the screen aperture the author has found that whilst the arrangement of the dots on the plate does

Digitized by Google



ORDINARY HALF-TONE. ETCHED IN EIGHT MINUTES: NO FINE ETCHING.

Digitized by Google



HALF-TONE BY SCHULZE PROCESS. ETCHED IN TEN MINUTES: NO FINE ETCHING.

Digitized by Google

not depend on the position of the centres of the apertures in the screen, the form and size of the dots are influenced by the stop in use only when the total area of the apertures in the screen amounts to not more than one sixth of the total surface of screen. The smaller the aperture in the screen (in this relative sense) the more distinctly the form of the stop is to be seen in the dot, even when the aperture in the screen appreciably departs from a circle. The following experiment can be made to prove the correctness of this view:—A screen is made as reproduced, in natural size, in fig. 3. One half had large circular openings, the other small rhombic apertures; the distance from centre to centre being the same in each case. The screen having been fixed at a sufficient distance from the ground-glass, the dots of light formed, on focussing on a white surface, are examined, as stops of various shapes are inserted in the lens. Obviously the dots behind the larger round holes are brighter, but the shape of the stop and the size of the dot, corresponding to various dimensions of stop, are rendered more exactly by the smaller holes in spite of their rhombic form.

As the rhombic form of the aperture is thus no drawback in the production of three-cornered, round, or six-cornered dots, it follows that for three-line half-tone the third line-screen can be completely dispensed with. The necessary screen is obtained by superimposing two line screens at an angle of 60°. An important condition is that the lines should be about half as broad again as the interspaces. Although a screen of this type obstructs a large quantity of light, and would, under the usual conditions, entail much longer exposures, it is found that it can be used at a much larger aperture of lens, a fact thus outweighing its greater opacity.

The chief advantage claimed for the screen is that, with it, etching of the platè is reduced to a purely mechanical operation. There is no need to varnish one part while another is being etched.

A supplement from a plate etched in one bath accompanies this number of the *Zeitschrift*, and admirably shows the good definition given by the screen, and particularly the fine gradations of deep shadow which it is able to rescue from being merged into one tone. The supplement was printed in the State Printery of St. Petersburg, in the experimental department of which establishment the process has been worked out.

In a later issue of the *Zeitschrift* Dr. Aarland reports upon the screen in the following terms:—"The exposure and etching system of Schulze has given extremely satisfactory results. Comparative experiments were made in the photographic department of the Imperial Academy of Graphic Arts in Leipsic, the original being a colored oil sketch. A negative was made on a color-sensitive plate and a brown-toned print taken from it. The task of preparing a good half-tone negative from this original was not free from difficulties. A Schulze screen, placed at my disposal by Herr J. C. Haas, was used, and for lens a Zeiss-Protar at *f*/9, of 690 mm. focus, the reproduction being made of same size. The times of exposure were the same in each case, as were also the times occupied in printing on the metal. Brass plates were used and the two prints etched 'rough,' without fine-etching. No retouching was done. The ordinary half-tone was eight minutes in the etching; that by the Schulze screen, ten minutes. The difference between the two should be sufficiently striking. Whilst in the ordinary half-tone the middle tones are completely gone, they are preserved in the other. The difference in the negatives also is very marked: that by the Schulze process rendering detail to a much greater extent."

Dr. Aarland concludes:—"It will thus be seen that the process is one of the greatest importance in practice—a fac-sim. reproduction and at less labor. If the process is suitable for monochrome, it is much more so for tri-color. The latter suffers from the evils it can remove."

Digitized by Google

FOUR-COLOR AND NEW ELECTROS.

(Specially contributed to *The Process Photogram.*)

WRITING in reference to the note which we quoted last month from *The British Printer*, a continental correspondent writes:—"*The British Printer* confuses Albert's tri- and four-color process. The fact of the matter is, that Albert's four-color process and the so-called 'Citochrome' process are identical. They were described in *The Process Photogram*, as you say, in 1901. Since then Albert has never been able to complete the machine which *The British Printer* is talking of. It was supposed to be a rotary machine, with inking arrangement for all four colors, to make use of the most important feature of his process, namely, the printing of one color on the top of the other instantaneously while still wet. This machine has not yet been completed, and, as far as I am aware, it will not be the case so soon. Messrs. Büxenstein of Berlin, however, were the first to see the enormous value of the French four-color machine by Lambert, who, by-the-bye, sold his English patent rights to a limited company floated by Dalziel. One of these machines has been running for twelve months, and another has been ordered. To see the blank paper go in one side and issue at the other side complete in color is a perfect marvel.

"Albert, on his part, recognising, probably, his incapability to complete his machine, has altered the usual three-color method by a correcting process to obtain a better proof from the beginning. Up to the present he has not been able to sell his process, because there is again the impossibility of printing one color on another while wet.

"The new process, however, which *The British Printer* is speaking of is a new method of making electros. Albert takes, instead of the wax mould, a lead mould, and presses the blocks with enormous hydraulic pressure into the lead. Here he receives a matrix as clear and sharp as the original block, and as no heating is required, there is not the slightest chance of altering the size of the three electros. On the other hand, lead is a sufficiently good electric conductor to dispense with black lead, which in the wax mould tended always to block up the high-lights. Enormous editions from such electros have already been printed, and they are certainly an enormous step forward."

Writing on Dr. Albert's new electro, the *Zeitschrift für Reproduktionstechnik* describes it as completely identical with the original block and a guarantee of exact registration. Our contemporary proceeds:—"Dr. Albert is able to prepare his lead matrices from half-tones in zinc, copper and brass, as also from type settings and wood blocks, for which, as is well known, a wax or guttapercha matrix has hitherto been used. As neither of the above are conductors of the electric current, a conducting coating of graphite must be applied. It is to this operation that the cause of all the electro's defects must be ascribed, for with the greatest care in electrotyping the very finest detail cannot be preserved. Further than this, the necessity of warming the wax when taking the impression affects the identity of size between electro and original block, so that for color work in large sizes there is no guarantee of absolutely exact register. In the Albert process these defects are shut out from the start. The lead matrices are made in the cold, and there is no need for the graphite, as the metallic lead is itself a sufficiently good conductor of electricity. The electro is a reproduction of the original block in size and quality. Moreover, it is made in a fraction of the time required by the existing processes. The

Digitized by Google

time during which the matrix is suspended in the copper bath is likewise greatly shortened, as it is possible to work with currents of 10 to 12 volts, with the result that full deposition is obtained in from half an hour to an hour. The current voltage is determined by the temperature of the bath, which, in the Albert process, may be 60° C. (140° F.). This, it will be seen, is an aid to rapidity which is not at the command of the older methods, as the wax matrices commence to suffer at a temperature of 30° C. (=86° F.). The further stages of the process are also shortened. The separation of the copper shell from the metallic matrix and its subsequent backing are done by rapid methods special to the new process.

"In contrast to the existing procedure the lead matrix, so soon as it has been stripped of its copper deposit, is at once ready for use again. If a second electro is not required, the lead matrix is utilised as backing metal.

"The new electros have come through practical trials with flying colors. Two of the first licensees are the large printers and publishers, August Scherl of Berlin, proprietors of *Die Woche*, *Der Tag*, and other papers, and R. Oldenburg, Munich."

FOREIGN NOTES.

Make-ready by the Dusting-on Process.

In *Viktoria*, the Dresden journal which associates itself very closely with relief printing, C. Fleck gives the following process for a photo-mechanical make-ready:—

A thin zinc plate of not more than 1 mm. thickness is prepared with a solution consisting of—

Distilled water	100 parts
Cooking gelatine	5 ,,
Gum arabic	25 ,,
White sugar	3 ,,
Glycerin	1 ,,
Ammonium bichromate	2 ,,

The ammonium bichromate is added only as a tanning agent, and can be replaced by other substances. The solution is flowed on the plate, spread evenly with the whirler, and allowed to dry.

A heavy proof is now taken from the etched block in a mixture of:—

Writing ink	1 part
Transfer ink	1 ,,

and transferred, in daylight, to the prepared zinc plate. The transfer is dusted over with a resin powder such as dragon's blood or with the following mixture:—

Syrian asphalt	1 part
Brown colophony	1 ,,
Yellow beeswax	·5 ,,
Graphite	·7 ,,

after dusting off superfluous powder with a powder puff, and the coating is fixed by heat. The plate is now placed in water and the coating washed away, from the uncovered portions, with a tuft of cotton-wool. A relief is thus produced which, after a three minutes' etch in 2 per cent. nitric acid, can be intensified by a second etch. The make-ready is then complete. In reference to the resinous dusting-on powder it should be noted that the finely divided ingredients are first melted, the hot fluid mass poured into water, and powdered and sieved when dry.

Digitized by Google

Spray Etching of Plates.

The acid blast of Levy seems to have suggested the patented system of M. Felix Leblanc, who in "brevet" No. 335,669 claims protection for a method of etching similar in principle to that of Mr. Levy, although differing in the much lesser pressure of the acid spray. The method claims to produce a very sharp etching in a nitric acid bath of strength less than 10 per cent. The drawings show the apparatus suggested. In the figures, *a a* are reservoirs containing dilute acid; they can be of any capacity whatever, and can be installed in any number. The acid is delivered by the twyer *b* into a box of ebonite or other non-attackable material on opening the cock *c*. The box *d* consists of a wooden or other cover *e* pressing on a sheet of caoutchouc, which forms a joint and serves as a wall to the upper part of the box. The lower part *g* contains a large number of apertures, about 1 centimetre [?—EDS.] in diameter. The liquid on being brought under pressure into the box, fills the latter, and is then broken up into a fine stream by the perforations in the plate *g*. Thence it falls in a fine rain on to the plate to be etched, which is laid on the supports *i i*.

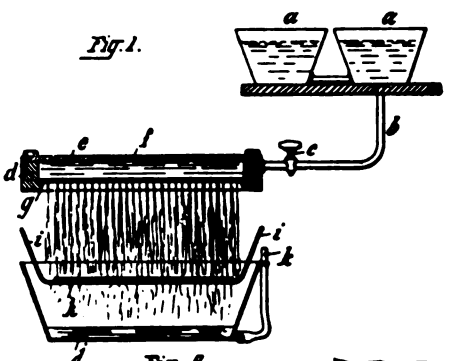


Fig. 1.

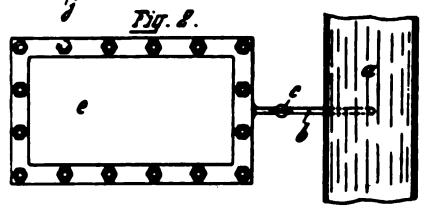


Fig. 2.

Half-tones from Royal Bromide Prints.

As a general thing, says *Camera Craft*, the photo-engraver has a horror of "Royal" bromide prints, for well he knows that there is a strong probability of his having to do the work over, and not only once but several times. Now, why is this? The principal reason is that "Royal" bromide paper, as far as the chemical quality of its light rays is concerned, is very different from any other paper on the market, and, besides, the paper is rough. An ordinary "Royal" bromide print, when considered in connection with the half-tone worker's wet plate, has no whites and no blacks. The yellow color of the paper is very low on the right side of the spectrum, and the silver deposit is very far from being darker than a pale grey. The result is a flat image with all its detail destroyed by the prismatic effect of each tiny protuberance of the rough paper. To overcome all these objections is almost impossible, but a great deal can be done without injury to the print. In the first place, it is desirable to get some "depth" in the print. This can be done by giving it a coat of albumen, which acts as a varnish and brightens it up. When the job is finished this can be washed off, and will leave no sign unless the work be done carelessly and the face of the picture scratched. This one operation will generally put details into the shadows that did not show before. Then it is expedient to use as coarse a screen as the job will permit of. By this the prismatic effect of the rough paper is flattened out, and a very agreeable effect produced.

Digitized by Google

THE HIGH-LIGHT PROCESS.

(Translated from *Zeitschrift für Reproduktionstechnik.*)

EVERY process worker knows the difficulty and labor in working a good facsimile half-tone from a pencil drawing, involving the experienced operator in much time and trouble to produce a true reproduction. Also it frequently happens that pencil drawings on yellow or mottled paper have to be made. The ordinary process cannot turn out such work as this with sufficient rapidity, the retouching and other after hand work occupying much time, and the reproduction likewise suffering at this stage of the process. When artists' sketches in pencil or crayon have to be done, it is impossible to preserve their character by the usual method of scraping out the background, and all the softness and tone of the drawing is thereby destroyed. This applies, of course, only to the cases where a drawing on a clear white ground is required.

To produce this by an easy method, the following instructions are given:—The operator who has mastered the process will soon dispense with routing-out and like methods. These "high-light" processes are little known among photo-engravers, and where they are, the method of working is frequently such that satisfactory results cannot be obtained. The process depends on the combination of a screen image, and a direct image on one and the same plate. An essential preliminary is a silver bath which has had very little use and a collodion which will work with the greatest clearness. The following recipe is given for the latter, on the strength of its excellent behaviour in practice:—

A.

Strontium chloride	5 gm.	77 gr.
Calcium „	5 „	77 „
Distilled water	20 c.c.	6 drams (fl.).

B.

Ammonium iodide	25 gm.	386 gr.
Cadmium „	22 „	340 „
Alcohol	60 c.c.	2 oz.

The solutions are filtered and then added to 3,200 c.c. (113 oz.) of two per cent. raw collodion. To produce the very clear-working property, 15 drops of the following C solution are added to the prepared collodion:

C.

Distilled water	300 c.c.	10½ oz.
Alcohol	150 „	5¼ „
Potass iodide	40 gm.	1 oz., 334 gr.
Iodine (pure)	3 „	46 gr.

Coming now to the exposure itself, the plate is prepared and laid in the dark slide as usual, save that it is carefully and securely fastened to prevent it shifting in the interval between the two exposures. The screen distance varies with the character of the original; in simple work the smallest distance is taken, but for others with tones of wash, etc., the distance is increased, as a better effect is obtained from the rounding off of the half-tone dots. Circular stops alone are used, and one a number smaller than usual in ordinary half-tone is chosen, as the special effect of the negatives is obtained, not through closing of the dots but through the high-light.

Digitized by Google

The first exposure is timed to give a fine dot in the deepest shadows. In the case of specially dark subjects it may be well to expose on white paper with the smallest stop, in the well known manner.

The dark slide is now carefully removed from the camera, the screen taken out, and a piece of clear mirror-glass, about the same thickness as the screen and free from bubbles and scratches, inserted in its place. This precaution is necessary to give the rays of light falling on the film the same inclination as when the screen was in place, but there is no need to use two cemented glasses—a dummy screen—as the Canada balsam cement has almost the same refractive index as glass. The glass being in position, the second exposure is made with the same stop as before. The exposure must be sufficient to make the ground of the drawing opaque in the negative after development; the fine grey lines must, however, be still printable. In the case of good white grounds and not too fine pencil or crayon lines this is easily obtainable. In cases of yellow, grey, or brown originals, longer exposure of the high-light is necessary.

If the result is not satisfactory after the first intensification—copper bromide is the best for this purpose—the negative can be reduced with cyanide and again intensified. These two reagents enable us to get a very good negative.

The advantages of the process are not exhausted by the foregoing mention of cases in which it is suitably applied. It can be used for all kinds of originals, and is specially recommended for greyish photographic prints, and for wash and sepia drawings.

The Holy Shroud of Turin is responsible for a volume of 180 large pages (Paris: Chas. Mendel) from the pen of Dr. A. L. Donnadieu. In it the historic and technical evidence for and against the genuineness of the Shroud is reviewed at extraordinary length. And the verdict is:—That the image on the Shroud is probably an ordinary painting.

New Photo-lithography.—*Photographische Chronik* records the recently granted patent of M. Rudometoff (German Patent, 152,565), the method of which differs from direct or transfer photo-lithography. In place of transferring the lines of the drawing to the stone or plate, a negative transfer is made in which the spaces between the lines are made to consist of soluble bichromated colloid. A positive image is thus obtained in the end.

In the practice of the process, paper bearing a film of bichromated colloid is exposed under the negative. Bichromated albumen may be used. The insoluble colloid is thus formed under the transparent parts of the negative. The back of the exposed print is then moistened and the print laid, image side down, on the stone or metal plate. In work such as color printing, where exact registration is necessary, the dry print can be laid on the stone, which is moistened with water. By rolling or pressure the transfer is now brought strongly into contact with the plate or stone, and the paper treated with water until the moisture penetrates to the albumen film, dissolving away the latter in the unexposed portions. The paper with the exposed portions of film adhering to it can now be removed from the plate, whilst those portions not exposed to light under the negative remain on the plate. After the negative albumen film, transferred in this way, is dry, the plate is inked up. On next rinsing it with water, the albumen dissolves off and is removed with its coating of ink, whilst there remain on the plate as a positive image those portions which lay between the two soluble albumen films.

By this transfer process negatives may be brought on to the stone by a dry method, an advantage to the chromo-lithographer. It is also claimed that retouching and other control of the exposed parts of the drawing can be carried out more easily than in existing processes, inasmuch as a solution of gum arabic or albumen can be sprayed over before inking up, and any desired portion thus reduced. Corrections can also be put in with pencil or brush before inking up, supplanting the use of needle or shaver. To what extent the new process will prove valuable in practice time alone can say.

Digitized by Google

Current Topics

Half-tone in two Printings.—*The Printing Art*, our contemporary of Cambridge, Mass., rarely lets a month pass without in some way demonstrating some better way of handling the half-tone block. We referred recently to the half-tone printed on a pebbled paper. The August issue of *The Printing Art* contains as frontispiece a half-tone of great depth and richness, the result of two printings. This particular block is by the James Bayne Co., engravers and printers, Grand Rapids, Mich.

A Registering Gauge has now been designed for the Sinop collotype process (Penrose & Co.), thus facilitating the application of the process to color work.

MR. J. E. JOHNSON.

The original maker of the Johnson screen. Block made with 133-line Johnson screen.

Among the recent batch of Burglaries in the Strand the premises of the Strand Engraving Co. and the Art Photogravure Co. were not overlooked. Messrs. Penrose also suffered slightly a short time ago from the enterprising burglar.

"Process" in Education.—*Camera Craft* announces that the New York Board of Education, which gives popular lectures to the people closely allied with their daily labor, has decided to include photo-engraving and photo-lithography. The lectures are to be illustrated with lantern slides, and will go into all the details of the processes.

Johnson Half-Tone Screens are now being brought before photo-engravers with renewed activity. We dealt very fully with these screens on their first introduction, and we have had no occasion to withdraw the report which we were then able to make upon them. The technical obstacles to be overcome in the making of a half-tone screen are not easily appreciated by those who have not been personally in touch with a manufacturer, but Leicester is established as a seat of manufacture of high-grade half-tone screens. As our advertisement pages show, a division of interests has taken place in the original firm, and photo-engravers with patriotic instincts can point to Leicester as a prominent source of supply of half-tone screens.

"Bourne's Bits" continues to make merry. Its editor is the most cheerful man in the block trade, and an exponent of forcible advertising such as we like to see. Thus in No. 3:—"Will you excuse repetition? A good thing is not worse for being repeated. 'God save the King' has been sung several times. More times in fact than we have yet mentioned what is now to be set down. It is this: In our vignetted half-tones we take especial care to lower the edges of plates to enable printers to obtain soft impressions of those edges. Further, we underlay all our half-tone blocks between plate and mount. We shave the backs of all our mounts to absolute type height, using special machinery, *ad hoc* or *ad block*. Is that *plane*?"

Overlay for Half-tones.—Charles W. Harness of Wolverhampton is now pushing the "Alrevo" overlay, and a booklet just issued gives a brief description of the process, from which we quote:—

"This overlay consists of a piece of *transparent* material bearing a duplicate of the picture to be printed, in relief. In it the darkest shadows are represented by the highest reliefs, which necessarily give the heaviest impression. The whites or high-lights are the shallowest portions of the picture and their pressure is proportionately light. Thus there are as many different heights as there are tones to be reproduced, and each imparts the precise degree of pressure demanded by the effect desired. Produced as it is

Digitized by Google

photographically, the overlay ensures an accuracy such as no other method can approach. All the reliefs fall into their due position as naturally as the dots on a half-tone block.

"It is almost as easy to fix the 'Alrevo' overlay as to place a stamp upon a letter. The machineman has only to take a rough impression of the forme on his cylinder or platten, and then, with ordinary paste, fix the overlays for blocks, which he can do to a hair's breadth owing to their transparency. When he has patched up the type portions where necessary he may draw his papers, or even one paper, over the whole, and print straight away. He will generally find one paper sufficient in the case of square finished blocks, but in the case of vignetted subjects may prefer the use of two, or possibly three.

"The advantages of the system do not call for much insistence. To do in minutes what has hitherto absorbed hours implies a saving both of time and money which no competent printer will be slow to appreciate; and to avoid keeping valuable machines idle must always be his aim. In these days, when the demand for excellence is so exacting, it will be an immense gain to find the artist's conception amply fulfilled instead of seeing it thwarted by the limitations of hand-cut overlays. Finally, the blocks, in virtue of accurate overlaying, will not deteriorate owing to undue wear in parts, but will print many thousands of copies more, while maintaining unimpaired the first delicacy of effect."

The Hentschel Athletic Club.—The ninth annual sports of the Hentschel Club took place with the customary success in the grounds of the London County Council, in Burbage Road, Herne Hill, on Saturday, August 20th. The following are the results of the several events:—

100 Yards Handcap.—Heat 1: F. Napier, 3½ yards start, 1; W. G. Dundas, 4 yards, 2; time, 11⅘ secs. Heat 2: A. J. Worf, 10 yards, 1; A. Grubb, 3½ yards, 2; time, 11½ secs. Heat 3: E. W. Merritt, 4 yards, 1; J. Thornhill, 3½ yards, 2; time, 11⅘ secs. Final heat: A. J. Worf, 1; E. W. Merritt, 2; F. Napier, 3; A. Grub, 0; time, 11⅕ secs.

One Mile Cycle Handicap (Novices).—B. Warren, 20 yards start, 1; H. Martin, 10 yards, 2; E. Drew, 70 yards, 3. Time, 2 min. 27 secs.

Tug-of-War (prizes presented by Mr. Carl Hentschel).—In this contest the teams winning best two out of three pulls qualified for the final. Heat 1: Colortype team beat Fleet Street, two pulls to nil. Heat 2: Meisenbach beat Foundry two to nil. Final heat: Meisenbach beat Colortype two to nil. The winning team was composed of:—K. Weishaupt, A. Worf, A. Cullam, R. Holditch, T. Gardner, J. Jensen, J. Williams, F. Carvell; reserves, P. Odle and C. Rouch, jun.

300 Yards Handicap.—The first three in each heat ran in the final. Heat 1: W. G. Dundas, 15 yards start, 1; H. Tilyard, 15 yards, 2; C. Davey, scratch, 3; time, 38 secs. Heat 2: E. W. Merritt, 15 yards, 1; W. Johnson, 10 yards, 2; J. Thornhill, 12 yards, 3; time, 37⅘ secs. Final heat: Merritt 1; Thornhill 2; Dundas 3. Time 36⅘ secs.

Five Miles' Cycle Championship (for a silver cup presented by Messrs. Schultz and Comins).—This cup has to be won three times for sole possession, and W. A. Berry having won it in 1902 and again in 1903, there was considerable speculation as to whether he would succeed in winning it for the third time, and thus become the proud owner. There was some uncertainty about it, as he had two keen competitors in Glumart and Ascott. The result of the race was:—W. A. Berry (holder), 1; S. Ascott, 2; E. Glumart 3; time, 13 min. 59 secs.

80 Yards Three-Legged Race.—W. A. Gale and J. Thornhill, 1; W. P. Nicholes and J. H. Thomson, 2; F. Shillam and S. Wienstein, 3.

Relay Race.—The relays consisted of a walker, a runner, and a cyclist. The walker, on completing a lap, had to touch the runner in his team on the back before the latter started, and he in his turn had to do the same to the cyclist in his team: Colortype (E. Spong, A. Grubb, and S. Ascott), 1; Fleet Street (F. Dowie, C. Davey, and G. Brown), 2; Meisenbach (C. Rouch, jun., W. Gale, and W. A. Berry), 3; Foundry (W. Shackelton, W. Johnson, and E. Glumart), 0; Shoe Lane (H. Otton, F. Fisher, and A. S. Barber), 0.

300 Yards Comic Costume Race.—In this event the competitors had to run 100 yards, dress in front of grand stand, run to winning post, and, needless to say, their struggles with the unfamiliar garments of the circus clown type were provocative of great amusement. Heat 1: F. Dowie 1, J. M'Farren 2; heat 2: F. Summerfield 1, F. Shillam 2; heat 3: E. Elkins 1, C. Rouch, jun., 2; final heat: E. Elkins 1, F. Dowie 2, F. Summerfield 3.

80 Yards Egg and Spoon Race (Ladies).—Entries for this event were taken on the ground, and there were enough for the race to be run in two heats. Final: Miss A. Bromley 1, Miss A. Kennedy 2, Mrs. Rouch 3.

One Mile Running Handicap (for silver cup presented by Master Chris. Hentschel—holder 1903, A. C. Speller).—C. Davey, scratch, 1; W. Shackelton, 60 yards start, 2; W. Johnston, 50 yards, 3. Time, 4 mins. 59⅗ secs.

One Lap Obstacle Race.—C. Davey 1, E. Elkins 2, C. Rouch, jun., 3.

Digitized by Google

One Mile Walking Handicap (for Challenge Cup presented by the O.P. Club).—E. Spong, scratch, 1; F. P. Eade, 130 yards start, 2; P. Odle, 90 yards, 3.

Ten Miles Scratch Cycle Race (for Cup presented by Mr. Carl Hentschel—holder, 1902, W. A. Berry; 1903, E. Glumart).—S. Ascott 1, W. A. Berry 2, E. Glumart 3. Time, 22 mins. 5 secs. In the sealed handicap in connection with this event E. Glumart, 45 secs. start, was first; Ascott, 30, second; Berry, scratch, third.

The officials were as follows:—Referee, Mr. H. J. Gibbins. Judges (running), Messrs. W. Herring (L.B.H.A.S.A.), G. G. Turner, B. R. Clayton (H.H.), A. F. Parker (P.C.S.C.); (cycling), Messrs. W. P. Chew, G. Brown, Geo. Glumart (K.W.C.C.), H. Martin; (walking), Messrs. A. J. Worf, A. Grubb, A. Coles, F. Shillam. Timekeeper, Mr. H. J. Rothery (A.A.A., H.H.). Starter, Mr. E. Stone-Collyer. Telegraph steward, Mr. S. W. Aitken. Press steward, Mr. E. Cretchley. Dressing-room steward, Mr. J. E. Hope. Marksmen, Messrs. G. H. Stone, A. Mortimer, W. P. Nicholes. Lap scorers, Messrs. F. Lawrence, J. Hayward, H. Cattermole. Stewards, Messrs. D. Ralph (track gate), S. Jutsum (grand stand), F. Napier (programme). Handicapper, Mr. E. Stone-Collyer. Hon. Sec., Mr. J. H. Thompson.

The prizes will be distributed as usual at the annual supper of the club.

Electric Pointers for Process Men.—The Boardman Electric Patents Co., Ltd., of 10 Southwark Bridge Road, S.E., in their latest list print certain facts and figures of electric lighting which we may reproduce here for the information of those to whom even the most elementary treatment of the subject is new knowledge. The volt indicates the pressure; the ampère, the quantity of current; the ohm, the resistance; and the watt indicates the total electrical energy, that is, the pressure in volts, multiplied by the current in ampères. An electric horse-power is equal to 746 watts. The Board of Trade unit is equal to 1,000 watts for one hour, or a current of 10 ampères at 100 volts pressure lasting for one hour. Dr. Fleming of England, and Professor Elihu Thompson of America, report that:—The arc light consumes 0·5 watts per candle-power produced. The incandescent light consumes 4·0 watts per candle-power produced. Therefore 1,000 watts in the arc light produces 2,000 candles, and 1,000 watts in the incandescent light produces 250 candles. The arc light is very rich in violet rays and is the nearest approach to daylight, photographically an actinic and quick light. The incandescent light, under normal conditions, is deficient in actinic rays, and therefore a slow light and badly suited for photographic purposes. The arc light is more suitable for the purpose and much less costly to maintain, after allowing for the necessary resistance in the circuit.

A New and Notable Process Camera.—We were recently able to inspect, at the premises of the Camera Construction Co., a newly patented camera for process work which this energetic and successful firm has recently designed and is prepared to supply direct to photo-engravers. In outward appearance the camera is not very different from others of the same class; there are no signs of its inward and mechanical virtues. These are directed towards (1) providing a rigid back; (2) holding the screen in strict parallelism with the plate and moving it to and fro in equally strict parallelism; and (3) accurately and readily placing the screen at any given distance from the plate. These are the aims of all builders of process cameras who go their various ways to achieve them. The Camera Construction Co. have evidently taken up the problems with a full appreciation of their importance and of the difficulty of solving them if the builder cling to established traditions of camera-making. They cast out woodwork from those working parts where the slightest warping of the best seasoned wood can disturb the parallelism of an adjustment. The screen holder is one solid iron casting, and the back of the camera being likewise supported with an iron frame, there is no woodwork between the line-screen and the ground-glass. The to-and-fro movement of the screen frame takes place like that of the slide-rest of a lathe. It is operated by a lever, and there is a further fine cam adjustment. The distance between screen and plate is denoted by a circular scale, the mechanical arrangement of which permits of its divisions being several times the distances they represent. The scale is divided to $\frac{1}{125}$ of an inch, but these readings are just about as easy to read as eighths of an inch on a foot rule. A finer adjustment of the distance can indeed be made. In fact, the makers claim a sensitiveness of $\frac{1}{1000}$ of an inch. Unlike some other arrangements, the setting and moving mechanisms are entirely distinct. This is a practical advantage, for once the scale has been set, the screen may be moved away, and brought back every time without further adjustment. The screen holder, we should also state, has automatic catches, making it impossible for the holders to drop accidentally and so possibly to cause the breakage of the screen.

The construction is such that very short focus lenses can be used.

As a piece of cabinetmaking the camera is all it should be, and it is certainly a notable addition to the cameras at the disposal of the photo-engravers. The Camera Construction Co. will send prices and other particulars of the camera direct from their factory, Durham Grove, Morning Lane, Hackney, N.

Digitized by Google

No. 131.—November, 1904.

THE PROCESS PHOTOGRAM AND ILLUSTRATOR.

A NEW PHOTO-MECHANICAL PRINTING PROCESS.

During a recent tour abroad (writes a correspondent), the most notable improvement I saw was a printing process patented by two inventors at Frankfort-on-the-Main, for making photographic copies on the same principle as Woodburytypes, in appearance in every respect as good as these, but printed by a machine of a somewhat similar character to a collotype machine. The process in outline is as follows:—A negative is made from the original of the required size, a positive (transparency) is made from this, and printed on to chromated gelatine supported on a stout glass. This is then washed out exactly like a Woodburytype, making a considerable relief. This relief is not now stamped into lead, but becomes itself the actual printing surface, the print being, as in Woodbury, a cast in gelatinous ink of the relief. It is in the construction of the machine that the inventors' greatest claims rest, since they say that 1,000 good copies can be produced per machine per day. Of course, it is obvious that the process can be used, not only for monochromes of any color, but also for three (or more) colors, the machine being fitted with an ingenious device for accurately registering the plates. I only saw an experimental machine of rough construction, but it had produced some most remarkable three-color prints of a richness and smoothness quite impossible of attainment by any other printing process. It has, of course, long been the desire of three-color workers to see the Woodburytype process used in the production of the prints, and this modification gives exactly the same results, quickly, simply, and without the need of an expensive hydraulic press with which to make lead moulds. Whether the gelatine reliefs would stand the wear of a long edition is perhaps open to doubt, but in any case they should last as long, or longer, than a collotype plate, and they are just as easy to make as the latter. The greater objection is that the prints need trimming and mounting or transferring, which will make them more expensive to produce than collotype prints. This is, however, more than compensated for by the splendid quality for which Woodburytypes have always been renowned. The inventors are anxious to receive an offer for the English rights.

Digitized by Google

"PROCESS" AT THE R.P.S. EXHIBITION.

THE technical section of the Royal Photographic Society's Exhibition can usually produce some exhibits which will repay the process man for his visit to the New Gallery. But the present collection is less a process one than many of its predecessors, probably for the reason that specimens of work which might have found their way to Regent Street are in course of selection for the imminent exhibition of photo-engraving at South Kensington. We say "imminent" in view of the announcements which have been made, but the actual date of opening of the doors of the Imperial Institute is still "wropt in mystery," and the methods of the management in procuring exhibits scarcely less so. We hear of people well able and willing to support the exhibition who have heard of it only casually. Therefore we fear that the collection may not be worthy of the present position of "process" or the distinguished auspices under which it is to be brought together. But to return to our subject: the first exhibits in the technical section of the R.P.S. exhibition are specimens of colored photogravure by the Art Reproduction Co., in the shape of very effective reproductions of a couple of portraits in the Wallace collection.

Most of the reproduction work, however, is three-color as represented by Carl Hentschel, Ltd., John Swain & Son, Ltd., and the L.C.C. School of Photo-Engraving, Bolt Court. The commercial work of the two first named represents this class of tri-color work at its best, and we must speak in appreciation of the excellent account given of both texture and coloring in the reproductions. Some examples of photo-algraphy in three, four, and five colors by Fred Walter Plews, should be noticed in view of the growing application of plate printing in three- and four-color work.

At the end of the Gallery will be found some more examples of the Art Reproduction Co.'s photogravure, from photographic and artists' originals.

But the frames with perhaps the greater interest for the process worker and illustrator are Nos. 593 and 594, wherein are collected some results of a method of photographic designing, devised by Mr. Robert H. Baskett. The kaleidoscope, frequently employed by designers, is the basis of the method to which Mr. Baskett has applied the camera, and a number of examples are given of how decorative natural forms as well as hand-drawn designs can be made to supply ornament in endless variety. Says Mr. Baskett in his description of the process:—

"By the use of two silvered-surface mirrors designs can be obtained, suitable for trade purposes, and the suggestions in design are of the greatest value to designers and art workers in all crafts.

"The mirrors reflecting any object placed at their ends are repeated many times, forming combinations undreamed of and in endless variety. Each one is registered in a few seconds by

FIG. 1.

Digitized by Google

camera and lens, and each design can in turn be repeated in a new form until all trace of the original design is lost. The silvered-surface mirrors are 12 × 8 in. for lenses of 5 to 6½ in. in focus. A wide-angle lens with these covers a 12 × 12 plate or larger if required.

"If placed in a position parallel to each other, borders, dadoes, frieze designs are given. If placed at different angles, all shapes from squares to circles are obtained; for instance, if placed at an angle of 45°, and drawings or objects revolved at the end of the mirrors, diamonds, stars and crosses, squares and circular designs of all kinds, are the result.

FIG. 2.

"If the borders are placed crosswise in the parallel mirrors, then piece designs are produced suitable for wall papers and fabrics of different kinds.

"The dried leaves of wild flowers in many cases take varied curves, and these form designs of great beauty."

FIG. 3.

Of the three examples which Mr. Baskett allows us to reproduce here, No. 1 is part of an early-Irish initial letter. Nos. 2 and 3 are designs made from it suitable for a cushion cover. The mirrors were placed at an angle of 45°, the lens being a Beck of 6 in. focal length. An exposure of five seconds was given. The loss of definition in one portion of the design is caused by the dull foggy light in which the copy was made, coupled with the number of times the design was reflected.

Digitized by Google

COLOR COLLOTYPE.

(From the German of Professor A. Albert in "Eder's Jahrbuch.")

THE fact must be admitted, just as freely as it must be lamented, that collotype in colors does not occupy the large place in reproduction methods which properly belongs to it. The process is pre-eminently suitable for artistic supplements where a facsimile reproduction is required.

The preference in former years for the "combination" method is easily understood. In it the colors were worked in by chromo-lithography and the drawing from the collotype plate. And the technical difficulties involved in collotype, particularly in the printing of the plates, had not then been overcome. With the combination method as it is frequently worked at the present time, with ten, twenty, or even thirty color plates, it naturally follows that the charm of the original is frequently missing from the reproduction.

For this reason, and for practical reasons too, collotype in three, four, or, at most, five colors is to be preferred to the combination method. A first necessary essential is a properly fitted establishment, especially in the printing-room. Next to proper conditions of temperature and moisture it is very advantageous to work color collotype with a grain somewhat larger than that used in monochrome work, as by so doing a larger number of prints can be taken off without interruption, and so a more uniform edition produced. The grain should not be so great as to be easily noticeable in the component impressions.

In regard to the making of the negatives there are several commercial methods ready to hand—orthochromatic plates, home-bathed plates, and also collodion emulsion, and by the use of proper filters subsequent retouching is reduced to a minimum.

For color-collotype I prefer dry plates, as any retouching which may be necessary is done on them with ease and safety. For this I make use of the following process, which is capable of dealing with all the corrections which may be found desirable. Any over-exposed portion is first rubbed down in the usual way with aid of alcohol, taking a little finely powdered pumice on the wash-leather if there is a good deal of reduction to be done. The operation then proceeds very quickly, and the details of the drawing are not injured. The high-lights and all parts which are to be clear white are then covered. Although good negatives, showing ample density in these parts, do not need this treatment, I consider it an indispensable aid, as if it is done, many printing operations, such as wiping the plates, etc., can be dispensed with and an edition obtained more quickly and also of more even character. The film side of the negative is coated with a fine matt varnish, to take subsequent pencilling with blacklead and to give greater transparency to certain parts by removal of the varnish in these places. Where needed also, transparent colors can be applied to the varnish coating.

In the matter of inks, I do not adhere to the so-called normal inks, but make choice as seems necessary from the character of the original. Yellow is usually either chrome yellow, ochre, or yellow varnish-color; blue, light and dark Milori blue, blue varnish-color or Kaiser blue; or a mixture of these colors. As red I have used the No. 4 "Alizarin lack" of Kast & Ehinger, which prints well and is economical and very permanent.

In printing red after yellow the exact registration is often difficult to ascertain, and a few prints taken off in black after the yellow has been printed will greatly aid in this task.

Digitized by Google

PRACTICAL NOTES.

By J. H. Moger.

The Value of Color Charts as Tests for Color Filters.

In noticing Dr. Eder and Dr. Valenta's last bulky volume (*The Photogram*, August, page 232), your reviewer says that section 4 is "probably the most important paper published on tri-color printing." This may or may not be true. Far be it from me to depreciate the valuable work of Dr. Eder—and indeed this paper gives many useful hints to those wishing to work tri-color scientifically—nevertheless I do feel that the beginner should be warned against placing too implicit a reliance upon the use of lithographed color charts of bright and even luminosity as a test for the value of tri-color filters. A chart of this kind is included in this paper of Dr. Eder's, and a similar one in the book of Baron von Hübl on three-color. In practice it will be found perfectly possible to reproduce such charts with fair exactitude and at the same time be impossible to reproduce with the same filters even an aniline tinted photographic print of fair contrast, to say nothing of a severely contrasted oil painting. It is necessary to take something more severe than bright charts as a test for the value of tri-color filters, and even after that they should be checked by taking exposures to the spectrum, as these will frequently show defects in the filters which were quite unsuspected from the inspection of the negatives of the chart.

Dr. Albert's Processes.

With interest I read the notes in *The Process Photogram* for September and October (the former quoted from *The British Printer*) on Dr. Albert's tri-color process, citochrome. This, however, I believe is not a tri-color process at all, but a four-color process. There are only three firms working it in Germany, viz., Messrs. Albert, Messrs. Buxenstein, and Messrs. Meisenbach Riffarth; no one else anywhere, so far as I am aware. Certainly the results are very good, but it should be remembered that all three of these firms are old established, having extremely skilled labor, especially in the fine-etching departments, and I think it will be allowed that it is upon this department more than any other that at present the excellence of three- or four-color work depends. Though much is claimed as to the superiority of citochrome over other color processes, it is not, to my mind, any better than the best English work, or, to take what is perhaps a fairer comparison, the four-color work of Messrs. Angerer & Göschl, which is admittedly done in the usual way.

Your description in August, 1901, which I believe to be correct, explained citochrome as being a process of making the color negatives by the indirect method, that is, without any cross-line screen, the novelty being to place the cross-line screen in the printing frame, the negative next, and then the sensitised metal plate in contact with it film to film. The frame is then turned over and exposed to light from the arc, which by elaborate mechanism is always kept at a certain distance, parallel and moving over the whole picture. After exposure the development and subsequent treatment of the metal plate is the same as usual in block-making. The principal advantage claimed for the method is, I understand, that it gives greater sharpness than the common way, but I think this would be difficult to prove. In theory the usual method, if properly carried out, ought to give results that could not be sharper, consistent with having dots at all, and in practice this is so. It would be impossible to wish for anything sharper than some of the results, for example, of Messrs. Angerer & Göschl in the "Studio." The

Digitized by Google

second advantage claimed, viz., the speed of production and "plasticity" of result, due to the wet printing, is, of course, not exclusive to citochrome or indeed to any four-color process, as witness the fine sheet of color examples printed wet on the Lambert press by Messrs. Dalziel, who are handling this press for wet printing in England. Some of these prints are well known three-color work of Messrs. Hentschel and Messrs. Swain, as well as some French three-color and four-color.

Unless inks having especially appropriate qualities are used when printing wet, there is no doubt some advantage in using four colors, having the black taken out of the three-color blocks, and supplied separately by the fourth black block.

The trouble in all wet printing is the fact that in the solids the ink tends to pick up the previously deposited ink, and instead of, say, the red lying on the yellow, it pulls it away and the blue also pulls more of both red and yellow away, leaving a very mottled and unpleasant effect. But yellow, red and blue only come on top of one another in the black parts of the block, so if these are first subtracted and black itself deposited there, then there is no trouble of this kind.

The New Electro.

Equally, I think, we should guard against extravagant claims regarding the new electro. There is not so much difficulty in making perfect electros now, provided sufficient time is allowed to make them, and some of the electros used, for example, in Messrs. Cassell's three-color printing is quite perfect as regards register. I was reading last year an article in *The Process Year Book*, in which lace was stamped into lead and electros made from that, and I believe I am not wrong in stating that electros have been made from Woodbury lead moulds. Has anyone ever tried to make a matrix in lead from a half-tone plate, and if so, with what success? Other things being equal, that would leave no trouble about register, and the process ought to be much more rapid than the guttapercha method.*

Cause of Zinc Etching Dirty.

Process Work publishes the following question and answers:—

"My half-tone plates (zinc) when etching and after being etched show a dirty looking scum on them; it matters not how I scrub, it cannot be removed. I used to have them shining like silver. The block prints all right but it looks bad. Is it the fault of the zinc or the acid?"

Scum on the surface of the finished etched half-tone is caused by some impurity in the acid, and owing to the oxide of zinc not scaling off evenly during the process of etching. To ensure this oxide coming away and the plate etching with a smooth shoulder add 2 oz. of a 40 per cent. solution of gum arabic to each pint of etching bath. When the plate has been etched sufficiently it will shine like silver. If it is desired to enhance this silvery appearance, rub over the surface of the etched zinc with a pad of flannel and moist whiting.—BURMAN NORTON.

To avoid a dirty looking scum on zinc half-tones etch in bath as follows: 160 oz. water, 4 oz. nitric acid, 4 oz. common alum; this you will find after plate has been etched in this bath and rinsed under tap (with rose attached) will clear all scum and your plate will shine like silver. Zinc tones etched in this bath are much softer in tone than bath without alum, also etches more evenly; wash your plates with good clean turps (only), as the scum frees itself much better.—H. E. BUSST.

The effect complained about by your correspondent may be caused both by the acid and the zinc. Too much sulphuric in the former and too much lead in the latter would cause the plate to etch dirty. To brighten, dip the plate in a strong nitric bath, and quickly pour water over it. This cleans the scum from the bottom of the plate. Then clean with water and whitening, using a stiff brush. This cleans the surface and gives a bright silvery appearance to the finished plate.—W. H. BLUNDELL.

---

* Since the above notes were written it has become generally known that Dr. Albert's matrix is a lead mould made from the original half-tone block.—EDS.

Digitized by Google

HALF-TONES IN NEWSPAPERS.

THE following leader from our contemporary *The Progressive Printer* takes a position which can be maintained with at least equal justification on this side of the Atlantic, where the half-tone is less used and worse used in newspaper work than in America.

"One should appreciate the fact that almost no improvement has been made in newspaper illustrations from a mechanical or artistic standpoint, and the half-tones in to-day's paper are no better than those of three years ago. It is with this feature of the subject that we want to deal, and while no revolution of the art is intended, a review of existing conditions, as they appear to the writer, may cause those most interested to think.

"To begin with, no matter how well a half-tone is made, it requires skill of a high order on the part of the pressman to retain all its tone values, and unless he can 'get out of the plate all there is in it' the half-tone as printed will be but a partial representation of the engraver's work, and will consequently deteriorate in appearance. Thus it is shown that the co-operation of the pressman is needed to insure proper results from half-tone illustrations, but that alone will not suffice, as skill also enters largely into the matter. Right here is where a snag of huge proportions is struck. The mere fact that a pressman knows his machine, and has worked on it for a long time, does not necessarily constitute him a good printer of half-tone illustrations without study or efforts on his part. Yet it is an accepted fact in nearly all newspapers that the writer has ever noticed. In changing the motive power on elevated railroads from steam to electricity, the operators or engineers were given a course of training to enable them to enter upon their new duties in the proper manner. Did any one ever hear of the pressman of a newspaper even worrying on the subject of printing half-tones when his employers decided to use them? In most cases he rebels at the thought, and he will do all in his power to discourage the idea. When, however, it is forced upon him, having plenty of confidence in his ability, he tackles the job in his customary style, without knowing anything about how half-tones are made, and caring less. His just anger arises every time he is compelled to run a half-tone form, and his main object is to get it off his hands. Of course there is little time to study or experiment on a newspaper, but there are lots of 'little things' about half-tones that, if the pressman knew them, would greatly assist him in his work and help him keep his temper at the same time. In this connection it will not be amiss to state that in the job field the skill of the engraver has long been recognised and studied by the other craftsmen. Thus we see special papers, special presses, inks and other supplies made to show up at their best the work of the engraver, whilst on the newspaper the engraver is limited and restricted to making plates that the craftsmen following him in the making of a newspaper can conveniently handle.

"The stereotyper stands in much the same light as the pressman. He has held from the first that half-tones are no good for newspapers, because they cannot be successfully stereotyped. He takes a fierce delight in demonstrating the correctness of his theory. He has not seen fit to change materials or methods in many instances, and even looks upon the introduction of machinery in his trade as a bad omen. The results he gets are far from satisfactory, and he is happy in his own mind that he is 'on to' the game and cannot be fooled by the engraver. He will point with pride to a cut, saying: 'That cut is clean and sharp, and therefore deep; this one is

Digitized by Google

just the reverse, and therefore shallow.' Yet they were etched side by side, on the same plate.

"It is hardly fair to expect good results under the conditions mentioned when every one handling half-tones, after the engraver, is interested in their elimination from the newspaper field, and is constantly looking for flaws, not for the purpose of remedying them, but to further demonstrate their lack of value.

"At last comes the engraver. He being regarded as the source of all the troubles to the men before described, is a sort of an Ishmaelite, and every one takes a fall out of him at the first opportunity. It's a case of 'hit him again; he has no friends.' No matter what he says, does not the word of the stereotyper and pressman, who have both been in the employ of the house for a long time, prove that his work is defective? Could anything be plainer? And there the matter rests. The business manager is up against it, and though he calls them all together for the purpose of improving the appearance of the paper, nothing but a rehearsal of fancied or real wrongs develops therefrom. Every one concerned goes back to his work with a grim determination to show up the other fellow."

EXPERIMENTS WITH UNEMULSIFIED SILVER BROMIDE.

The field for research offered by bromide of silver free from gelatine, particularly as regards orthochromatism, induces us to give a translation of a paper by Dr. Karl Schaum in Eder's Jahrbuch, *which adds to the scanty knowledge of the behaviour of unemulsified bromide.*

THE plates were prepared according to the directions of Luther.* Pieces of matt glass were carefully cleaned and placed strictly level in a dish with bottom of mirror-glass. The dish is filled with a solution of ammonium bromide (2·5 gm. in 500 c.c. of distilled water), and 3 gm. of silver nitrate, dissolved in 50 c.c. of distilled water, carefully added with much stirring. In two days the deposition has taken place completely. It is best to let the plates dry before washing, as then they are not so easily pitted by the wash-water. To wash, distilled water is carefully poured on and slowly poured off. On drying, the silver bromide adheres as a compact film.

The behaviour of the emulsionless bromide towards developers will first be considered. It is frequently asserted that unemulsified silver bromide, exposed or not, blackens under a developer with the same rapidity. Luther's researches have already shown the incorrectness of this statement. Light impressions can be developed on the film prepared with excess of bromide in a neutral solution. Luther has precipitated from very weak solutions with an excess of hydrobromic acid. If developer of the concentration usually employed for gelatine plates be used, almost instantaneous blackening sets in with many developers, *e.g.* ferrous oxalate and edinol. Full reduction takes place less quickly with others, such as adurol, hydroquinone, and Belitski's developer, and metol acts slowest of all. To obtain good gradation with freedom from fog, the metol developer should be mixed with half its volume of water.

The gelatine is the cause of the slower reduction of the silver from an emulsion compared with unemulsified bromide. According to Abney, the

* *Zeitschrift für Physikalische Chemie*, 1899, 30, page 268.

Digitized by Google

action of the colloid is a mechanical one, especially in the case of gelatine. Our own experiments confirm this view.

Precipitated silver bromide was suspended in gelatine solution: plates coated with the mixture could be developed glass clear after exposure. Further, the silver bromide was extracted from a ripened gelatine emulsion, and allowed to deposit on glass. The extraction was completed up to the point of complete removal of the gelatine. This silver was reduced even more quickly than the freshly precipitated, although an image can be developed on such silver bromide with a metol developer, mixed with its own volume of water, and used for a short time.

On re-emulsifying this silver bromide in gelatine, light impressions can be fixed satisfactorily with strong developer. A simple application of gelatine to a film of deposited silver bromide prolongs development considerably. In regard to the differences observable between silver bromide precipitated in a gelatinous medium and bromide first precipitated and then emulsified in gelatine (the difference is in the greater speed of reduction of the latter), the cause, according to Quincke, is in the formation of solution of silver bromide and gelatine, this solution, or "Bromsilberleim," possessing very complicated properties. Such solutions are, of course, formed to a greater extent in emulsion-making than in suspending silver bromide in gelatine. The unexposed silver bromide must be less easily reducible in these solutions than when protected only by a film of gelatine, as a solution of silver bromide and gelatine has a smaller bromine pressure than pure silver bromide. The formation and properties of these solutions should be sufficient to explain the differences between gelatine and collodion emulsions.

The sensitiveness of unemulsified silver bromide is determined by the soluble bromide used for precipitation. Experiments on this point are in progress.

The phenomenon of ripening is dependent largely on enlargement of grain and to interaction with the gelatine (*i.e.* on a slight reduction of silver bromide, or, according to Quincke, on a clotting of turbid solution). It was found that our colloid-free films showed ripening when they were heated in a moist or dry state to 65° C.; the sensitiveness increased from 5 Scheiner to 9. On heating for five hours to 65° C. the films fogged under the developer. Increase of sensitiveness took place on heating under water, but to a lesser extent. Gradation, which is very bad in the case of unripened films, is good after ripening, but measurements have not yet been made.

We have found solarisation to take place with our films, although Luther has not observed this phenomenon. In our cases the solarisation resembled that of dry plates. Bathing for twenty-four hours in a 5 per cent. solution of ammonium persulphate completely removed it, so that the parts exposed for the longest time gave, on development, the greatest density.

Overheard.—The European correspondent of *The Illustrator* writes that the following occurrence (in the account of which only the name of the town is fictitious) is an interesting comment on the fact that in many photo-engraving shops more and better work is being turned out in a working day that is short than in one which is long.

Manager of Works—"Mynheer, we have now been working *four* years on these pictures of Bruges and only six are completed. I fear that before the series is finished the aspect of the city will have changed."

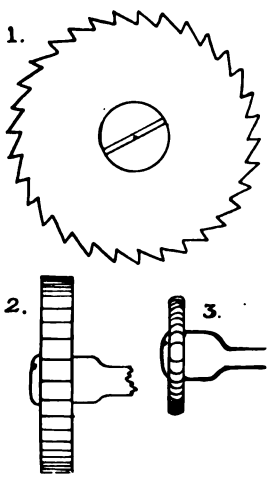
The Baas—"Ah, yes. Well, perhaps it will be better. *We shall call it Old Bruges.*"

The above conversation occurred in an *atelier* where ten hours per day are worked, and time books used.

Digitized by Google

A ROUTING ACCESSORY AND A SCREEN ADJUSTMENT.

THE router is now so firmly established in every photo-engraving establishment of importance that any suggestion as to how to dispense with it seems out of place. Writing, however, in *Eder's Jahrbuch*, Herr L. Tschörner, one of the instructors under Dr. Eder, makes mention of an appliance which can do certain of the work of a router and may supplement the latter, even if it cannot replace it. A flexible gearing is attached to a small quick-running electro-motor, deriving its motive power from the ordinary electric supply. Such gearing is a regular article of manufacture for medical and dental purposes. A tiny milling tool is fitted to the head of the gearing, the size and pitch of the tool being adjusted to the particular requirements of the work. The most useful form of tool is found to be that shown in fig. 1. The section may be either square or round (see figs. 2 and 3). The diameter and breadth depend on the size of the surface to be treated; for small work, the round-edged tool shown in fig. 3 is most suitable, whilst the form seen in fig. 2 is better for larger blocks.



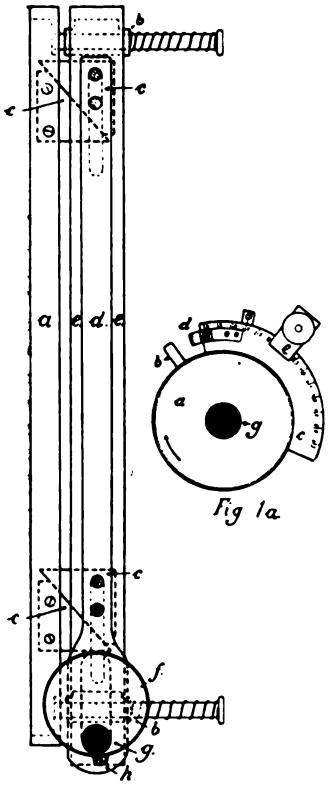
Further, the milled tool can be replaced by a small circular saw of the shape and size of the former; this is used for trimming blocks and cutting up plates. It is well to have the saw with small vanes in order to keep the block free from bits of metal during the operation.

A cutter of the above design has been made by the firm of L. Schulmeister, Vienna, and has proved of practical service for some considerable time in the Imperial Graphic Institute.

In the same issue of Dr. Eder's yearly digest, Herr Tschörner describes a device for holding the half-tone screen in the camera and for moving it to and fro parallel with the focussing screen. He emphasises the need of mechanism which will do this not only while it is new but throughout the usual wear and tear of regular use. The arrangement described below is that constructed by Herr Tschörner, and in use for three years in the Imperial Graphic Institute, Vienna, where it is found to be still preserving the strict parallelism of the ground-glass and line-screen. A side section of the arrangement is seen in the figure, the auxiliary drawing representing the hand adjustment.

The frame *e*, which is fastened inside the camera, carries the guides *b* in which the frame *a*, carrying the screen, can move by means of the guide pins. On each side of the frame *e* is fixed the eccentric *f* to the pin or cylinder *g*, which pierces the base of the apparatus. On turning the eccentric by means of the pin *g*, the connecting piece *d* is drawn down by the nose *h* attached to it. To this connecting piece, and also to the screen frame *a*, metallic triangular pieces of metal are fixed, their hypotenuses sliding one over the other. When the connecting piece is drawn down, the triangular pieces attached to it press the screen-frame against the focussing

Digitized by Google



screen or sensitive plate. On turning the eccentric back, the spiral springs at *b* press back the screen frame and connecting piece into the position of rest shown in the drawing.

The turning of the pin or cylinder *g* is done by a disc fixed to the outside of the camera. This disc *a* is shown in the smaller figure. A graduated sector *c* is movable in regard to the cylinder *g*, being fixed in any position by a set-screw. The spring *d* is fixed to this sector, the piece *b*, which is part of the cylinder *g*, catching with it on the disc being turned. The rotation of the cylinder is thus made sooner or later by the adjustment of the sector, and thus the screen frame fixed further from or nearer to the sensitive plate. As the circular sector must be moved several degrees in order to alter the position of the screen by one millimetre, the adjustment is a particularly delicate one.

Mr. Hounslow, a well known London process man (says *Process Work*), who recently took over the management of the process department of Messrs. Hulton & Co., Manchester, publishers of *The Daily Dispatch* and other newspapers, has now got his department into such a state of organisation as will challenge comparison with any similar concern in the kingdom. He finds that by running two shifts of 9 to 6 and 6 to 10.30 he is able to respond to any sudden demands for rush work, and this new system is much more favored by the employés than the old one of long overtime. It suits, moreover, the requirements of a sporting district where the football or cricket matches finished at 5 to 7.30 must be fully illustrated the same evening.

Stereoscopy—two German works.—Two companion volumes from Herr Gustav Schmidt, Berlin, portend, we hope, a growing interest in the stereoscope among Germans. The first is *Stereoscopy for Amateurs*, a second edition; the second, a new work by Dr. W. Scheffer, discussing stereoscopic photography on mathematical and physiological grounds, though not to the total exclusion of practical matters. The *raison d'être* of the book is, however, the theory of stereoscopy, and that statement can fortunately be supplemented by an acknowledgment of the lucid and instructive way in which the writer starts from elementary principles.

Negatives of Fine Grain.—Messrs. A. & L. Lumière have recently made a number of experiments, with a view to determining the possibility of obtaining fine grain images with developers other than paraphenylene diamine and orthoamidophenol; and, secondly, the precise conditions for the production of this special state of the silver. Their general conclusions are as follows:—

The best developing formula for rapid emulsions, which gives images of normal intensity and free from fog, provided always that the plate be sufficiently exposed, is the following:—Water, 1,000 c.c.; paraphenylene diamine, 10 gm.; anhydrous soda sulphite, 60 gm. This method should be found of great interest for the development of negatives which are to be used for the purposes of enlargement. The grain forming the silver of the image being much finer than that of ordinary negatives, it should be possible to produce enlargements of greater size and with a continuous gradation of the half-tones. With slow emulsions this new method of development should prove equally interesting, especially in the case of lantern slides, for by its means beautiful brownish-violet tones are produced which vary according to the composition of the developer. Independently of paraphenylene diamine, in which the relative proportions of the reagents may be altered according to the tone desired, a normal hydroquinone developer may be used to which has been added from 5 to 30 gm. of ammonium chloride per 100 c.c. of developer, according to the desired tone.

Digitized by Google

TESTING THE DARK ROOM LIGHT.

THE illumination of the dark room (says *Zeitschrift für Reproduktionstechnik*) is of the greatest importance in process work, as it is one of the chief factors in providing conditions for satisfactory work. The limits of safety are, of course, not absolute: wet collodion requires one kind of illumination; color-sensitive collodion emulsion, another; color-sensitive dry-plates, still another. The numerous attempts which have been made of late in the direction of improving dark-room illumination testify to the importance of the question.

It frequently becomes necessary to compare two different illuminants of the dark room in regard to safety and efficiency. Such comparisons are very often made in the most imperfect manner, and the conclusions thereby arrived at are quite erroneous. In particular, when comparing the ordinary pot or flashed ruby-glass with the more modern light-filter, the superficial method adopted affords no results of value. A plate, for example, is exposed for a certain time behind the filter and for the same time behind the ruby glass, and it is afterwards noticed which of the two plates is more fogged or veiled. Such a method is absolutely childish. One might as well compare the efficiencies of two flash powders by taking the same weight of each without regard to the percentages of magnesium in them.

A light-filter for the dark room is the more perfect the more of the desired light it transmits and the more of the undesired light it absorbs. Comparing a ruby glass with a dyed gelatine screen in the primitive way outlined above, a glance through a comparison spectroscope will show at once that the proportions of red light transmitted by the two filters is enormously different; that the ruby glass cuts off about sixty or seventy per cent. of the red light, whilst the gelatine filter absorbs only a very small proportion. As red light is not without action on photographic plates, even on those which are not color-sensitised, it follows that much less fogging of the plate will take place under the ruby glass than under the gelatine screen, which lets through a very much greater amount of light. This greater transparency is only compensated in specially favorable cases by the better quality of the filtered light, and so it is seen that the gelatine screen is only about as good, or indeed not as good, as the old-fashioned ruby glass.

When practically instituting such comparisons as the foregoing, the lights to be filtered must be equal to start with, or allowance made, when exposing plates, for their inequality. We will give simple directions for the benefit of those who desire to make tests of this kind seriously, obtaining from them a useful result.

Two identical incandescent electric lamps are connected in the same circuit and the lights filtered, one by one filter, the other by the other filter to be tested. We thus fix the equality of the two lights. We now measure the relative intensities of the filtered light. We place them one metre apart, so that the surfaces of the filters face each other, and bring between them a Bunsen photometer—that is, a paper screen in the centre of which a small circular paper has been rendered partially transparent with vaseline. The paper screen is moved to and fro between the two lights until the transparent spot reappears from both sides. The distance from each light to the screen is then measured. Assuming the distances to be, say, 70 cm. and 30 cm., then the lights are as $70 \times 70 : 30 \times 30$, or as $49 : 9$; or, roughly, as $5 : 1$. In comparing the two screens, now, for the actinic rays which they may allow to pass, exposure to one must be one-fifth that to the other.

Digitized by Google

FINISHED BLOCKS WITHOUT HANDWORK.

The Claim of a French Inventor.

It is claimed by Charles Guillaume Petit of 17 Rue des Potagers, Bellevue, Seine and Oise, France, that by printing twice on to a plate coated with sensitive bitumen he obtains a block from which pictures of "new appearance" can be printed. The difference between these pictures and the usual results of half-tone printing we gather to be precisely the difference between the proofs from a plate before and after fine etching. M. Petit says*:—"In the present condition of process engraving the general tone of the reproduction upon metal of the screen negative is uniformly grey. In order to remedy this drawback it is necessary to etch the metal anew and to work it up with a tool. It is obvious that this intervention of the operator leads him to a personal interpretation of the original which is prejudicial to the truth of the result, and moreover is very costly."

We are quite at one with M. Petit, that in process as it is worked the screen negative gives a plate on which a good deal of fine etching must be done. But this drawback can be overcome by less heroic measures than those which have been worked out and patented. In previous issues we have printed blocks destitute of fine etching, yet coming up to the commercial standard of "a good bright block," and produced by ordinary every-day methods. However, to M. Petit's process, which we describe here practically in the words of his patent specification: saving that we have throughout substituted "screen" for "hatched" in the expression "hatched negative," and have in one or two other instances done a kindness to the gentleman who has put the specification into technical (!) English:—

After having obtained the screen negative plate, it is exposed to the light upon bitumenised metal, and on developing it with turpentine a positive reproduction is obtained which is suitable for receiving the etching. Up to this point there is nothing new. But—and this is the essential feature of this invention—in subjecting this plate thus obtained to heat before the etching operation, the bitumen image is rendered completely proof against attack by the most powerful solvents, which was not the case before heating. This allows of spreading over the first picture a fresh layer of a solution of Judea bitumen which will receive in its turn the exposure to the light under the same, or preferably under a second negative of the same subject screened in a different way. By screened in a different way it is to be understood either screened by means of a different grating or by means of the same screen placed in a different position.

It is to be understood that this operation may be repeated, if need be, with successive heating, except for the last picture which precedes the etching operation, and which it is not necessary to render insoluble.

By the improved process the tones of the original are reproduced with more strength, the superposition of the dots or intersections of the lines composing the screens giving a perfect reproduction of the original are without any retouching or personal intervention of the operator. It has hitherto been difficult to superpose the successive layers in a manner adapted to be acted upon by the etching agent without the solvent contained in the second layer dissolving afresh the first layer. This difficulty is overcome by rendering the picture of Judea bitumen which it is desired to cover

* English Patent 12,802, 1904.

Digitized by Google

with another picture, perfectly insoluble in benzene, by heating the plate sufficiently before the etching operation.

This superposition, obtained without insulating material and before the etching operation, of two or more pictures of Judea bitumen, was absolutely impracticable before this invention, because the solvent contained in the following layers dissolved the preceding bitumen pictures.

As herein described, the fixing or insolubilisation of the successive bitumen pictures is effected by the action of heat, but it is to be clearly understood that this invention is not limited to the application of heat, and that the fixing or insolubilisation may be effected by any other physical or chemical means.

The improved process has the following important advantages:—

1. It does away entirely with retouching, with the consequent result of a very considerable reduction in the cost of production.

2. It affords greater accuracy, because the process is exclusively a photographic process.

3. A new appearance of the pictures is thereby produced.

An Etching Bath for Zinc Half-tones.

A bath of nitric acid and water only, says Albert Bauer in *Zeitschrift für Reproduktionstechnik*, is inferior to the following mixture:—

Water - - - - -	1,000 c.c.
Nitric acid - - - - -	800 gm.
Ammonium chloride - - -	75 „
Wood vinegar (pyroligneous acid) - -	50 „

Sunlight for Color Work.

As a general thing photo-engravers accept the idea that sunlight is best for making the filter negatives for three-color work. "It is and it isn't." A photo-engraver (writes *Camera Craft*) who attempts to work in sunlight must use a good deal of judgment or he will have a great deal of trouble, unless it happen that a train of luck is following him. Sunlight varies more than arc light, and it will not do to trust your eye to tell how white the rays are. Of course it's a pretty good idea to make the negatives in the middle of the day when the sun is highest, but even then there is liability of error. Arc lights contain too many violet rays, and ordinary daylight contains too many yellow rays, both of which have their effect on the color screen negative, as can be proved by exposing the same copy under the two conditions through a yellow screen. With a red screen the difference is more decided, but that is not necessary to a test. The only exact method of testing the sun's rays is with the spectroscope, but of course such a piece of apparatus is out of consideration in an engraving shop. What the engraver wants is to find out when his light is at the point that he knows suits his color screens. The simplest way of doing this is to get a piece of orange colored glass, cut to fit a 5 × 4 printing-frame. Place this in the frame, and on top of it put an ordinary negative of good quality, landscape preferred. Now put in a piece of P.O.P. and make a good, strong print, watching carefully to see how long it takes. If you then make a set of negatives and find them to be all right, you will have a standard for all future work. A few trials with this simple arrangement on different days will soon show what a great difference there is in sunlight, even when none is apparent to the eyes.

Digitized by Google

REFLECTIONS AND COPYING.

In the reproduction of many originals the character of the surfaces introduces a number of difficulties. In the case of prints and of oil-paintings it is the reflecting nature of the "copy" which gives trouble. In other instances the photographer has to take in hand originals in the shape of rough prints, or oil-paintings with the color laid on thickly. In taking steps to avoid the reproduction of these peculiarities of texture, the chief aid is the lighting, says *Zeitschrift für Reproduktionstechnik* in the course of some anonymous notes on the subject. The more perpendicularly the light falls upon the original, the greater the tendency for reflections of objects near by to appear in the reproduction. With the light falling more or less slantingly, the reflected images are less liable to appear, but on the other hand, in the slanting illumination, any coarseness of texture is exaggerated through the longer shadows cast by every tiny eminence on the surface.

The writer in the *Zeitschrift*, holding that reflections are a more serious trouble than surface irregularities, recommends an oblique lighting for these difficult originals, applying all possible remedies for the relief of exaggerated texture. In many cases a strong reproduction of, say, an oil-painting, with the colors heavily laid on, is precisely what is wanted, whilst in others, as, for example, an old oil-painting, the cracks in the surface would be disagreeably intensified by side lighting. The means of preventing these surface defects from emphasising themselves are to be found in some number. One very effective measure, for application to originals of small size, is to bring the print into optical contact with a piece of plate glass by immersing both in a mixture of water and glycerine and removing them together. The film of glycerine between the glass and the print fills up the irregularities in the surface, and by recently taking advantage of this dodge, the writer was able to make a decent reproduction of a print so defaced by cracks that parts were scarcely recognisable.

It is not easy to adopt this method with large originals. Other methods must be sought, but in the first place they must not in the least endanger the prints. The following is suitable for oil paintings:—Any adherent dirt is removed with a sponge dipped in lukewarm water, the surface mopped with a soft linen cloth and put in a warm place for a few hours to dry. The whole surface is then gone over with purified albumen, by means of a large soft brush. To prepare the albumen, the whites of fresh eggs are beaten to a froth (without addition of ammonia) and the clear liquid afterwards decanted off. The albumen is applied very thinly; it has the effect of bringing up the image much more clearly, obliterating small cracks and modifying larger ones. The painting is placed away free from dust and copied in the usual way. The coating of dried albumen is afterwards removed with warm water.

The same method can be adopted for cracked and yellowed prints. In these cases improvement is derived from a weak solution of white shellac in absolute alcohol brushed over the print. This is removed, after reproduction, with strong alcohol.

Digitized by Google

Current Topics

Photo-Engravers' Union No. 1, of New York City, says *The Illustrator*, have just issued a telephone card containing the names, addresses, and call numbers of all the union shops in the city. The card is convenient in size, is clearly printed on good stock, and is being mailed to every firm who is using photo-engraving throughout New York and vicinity. This is unique trade union advertising that is bound to be helpful to all the union shops, and more or less disconcerting to those without the walls. Trades unionism is a business proposition, and as such it requires business methods to further its cause. Judicious advertising in right lines is essential, and this first effort of the New York union is a credit to the sagacity and sound judgment of the officers.

A Batch of Specimens from the Coe Collotype Co., Bradford, shows us the varied work which is being done by that firm in collotype, large and small, monochrome and in colors. One of the effective pieces of large work is a poster for the Yōst Typewriter Co.

"The Optics of Photography and Photographic Lenses" (London: Whittaker; 3s 6d.).—A third edition of the late J. Traill Taylor's well known work. The author's method was peculiarly his own, and not one calculated to make the subject clear to those studying it for the first time. But the present edition has been somewhat revised by Mr. P. F. Everitt, who adds a most comprehensive review of the modern anastigmats.

Examples of Printing by the students in the class at St. Bride's Foundation Institute have been issued in a handsome volume as a record of the 1903-4 session. The prospectus of the Institute contains particulars of these numerous classes, embracing every department of printing, and sets forth also the many advantages, in the way of instruction and recreation, offered to members of the Institute. We wish St. Bride's still greater success in the excellent work it carries on.

"The Science and Practice of Photography." By Chapman Jones (London: Iliffe; 5s.).—The fourth edition of this well known work runs to 560 pages, and is printed in large, clear type. The text has been rewritten, and the author's characteristic precise style is especially welcome in such new chapters as those on lenses, orthochromatic photography, photographic measurements, and the more exact testing of sensitive plates. It is *the* book for the serious student's first look into photography.

Type-high Blocks, type-high at the corners and in the middle, *just* type-high, no more than type-high, with flat faces and flat backs. This is what the printers want; this is what they say they often fail to receive. One of the big firms, appalled by the "extras" they have had to charge for doctoring blocks in illustrated work, has written round to all its principal customers and their editors, urging them to test all blocks on delivery from the makers. It has even gone so far as to supply a substantial type-high gauge to each publisher's manager and editor who will use it.

Block-makers please note.

Bichromate Poisoning.—L. de F., New Orleans, writing to *The Inland Printer*, asks for information:—"I have had to stop work at photo-engraving several times because of sores coming out on my hands. Sometimes the sores are up my arms where no chemicals touch. The last time the doctor in the hospital said I am poisoned from bichromate of potash, and that I should not work at the business. My employer said I should write to you." Mr. S. H. Horgan in reply says:—"If the doctor says you suffer from bichromate poisoning, he likely knows. A peculiar thing about chromic acid, which is the real poison in the bichromates, is that it poisons some persons and does not seem to affect others. For ten years, while I worked at photo-lithography, my hands were constantly stained yellow from bichromate of potash without any apparent injury to myself, while I have seen others who did not handle bichromate in such quantities get the sores you describe, and in one case the fingers became so sore that the finger-nails dropped off. Some overcome the danger of poison by wearing rubber finger stalls, and others by rubbing into the hands every morning before work, and while the hands are clean and dry, a solution of white wax in ether. This wax fills the pores of the skin, the ether quickly evaporating and keeping out the poison. It has been recommended to those handling bichromates that they bathe their hands in a wash of a quarter of an ounce of acetate of lead in ten ounces of water, after which the hands should be washed well with Castile soap in warm water and dried thoroughly. Doctors state that those with a taint of syphilis in their blood are almost certain to be affected easily by bichromate poisoning. The best course for those sensitive to this poison is to get out of process work if they cannot get positions at it in which they are not liable to come in contact with bichromates."

Digitized by Google

No. 132.—December, 1904.

THE PROCESS PHOTOGRAM AND ILLUSTRATOR.

IS THE PROCESS MAN A PROFESSIONAL?

With some other little queries lately raised.

At the recent meeting of the Professional Photographers' Association, which discussed the suggestion published in our September issue, for the re-founding of a "Benevolent," the question of the process man was more than once raised. No very definite discussion took place, but questions were asked as to whether process workers would be considered eligible for benefits, whether they would be expected to assist the proposed fund, and finally, whether they were eligible for membership in the P.P.A. In reply to the last question, the secretary read the rule on eligibility, which said that the association was founded for "makers of photographs for commercial purposes," from which it was concluded that, strictly speaking, a process man would be eligible for membership.

In the detached groups after the formal meeting closed, the question was again raised. It was felt that the P.P.A. and its hard-working committee have plenty of work in catering for the interests of those portrait photographers, who form almost the whole of its membership, and for their assistants; but it was also suggested that if a Benevolent were formed, the process men should be very strongly urged to support its funds, and that such funds should be available for the relief of process workers in distress. It was even hinted that the process firms and their workpeople might be invited to elect some portion of the committee, so that their interests should be directly represented, and these proposals are, at least, worth consideration.

The methods and conditions of portrait studio work and of photo-engraving are so entirely different, that it is very unlikely that any single association can usefully represent both crafts. Even for the technical and press photographers who stand between the two camps, the P.P.A. can do

Digitized by Google

comparatively little. And even in connection with purely benevolent matters it is likely that the best results can be obtained by different means and different organisations in the two cases. No one doubts that a benefit fund is better than a benevolent fund, if it can be worked. In one case, those who can, are expected to give; those who need, are expected to receive—whether they have supported the fund or not. This is simply charity, and although the discriminating, carefully administered charity of a man's own craft is much better than public charity or the workhouse, it is not so good a thing as thrift. To the benefit fund a man makes his regular contributions, and when sickness or loss of work overtakes him, he comes upon his own fund, raised by his own contributions, and takes its help as a matter of right, not of charity.

In the case of the professional photographer and his assistants (especially the latter) there are great difficulties in the way of establishing a benefit fund. The positions of assistants, as regards wage, duties, hours, etc., are much more varied than those of process men; the number of assistants in any one studio (even in any one town) is relatively small; and many (especially the younger) men change their berths fairly frequently, so that any definite organisation, regular collection of subscriptions, or proper distribution of benefits, is extremely difficult, if not impossible. To them, as want and misfortune must come to some, occasionally, the benevolent fund seems the right and kindly thing.

Process men, on the other hand, are in good position for organising for mutual benefit. They have their trade union—even if they do not support it so generally as its officers wish. The machinery is already provided for collecting and administering their subscriptions in such a way that they claim benefits, in case of need, as a matter of right—not charity. The process man is getting a higher general rate of wages than the portrait assistant; he is far less affected by seasons, by sudden changes of trade, and by other causes which make the portrait man's actual earnings somewhat uncertain. He can, if he likes, usually make good provision for sickness or temporary loss of work, and therefore is not very likely to ask assistance from the Benevolent unless as the result of incompetence or recklessness. The P.P.A. therefore, while it will probably decide that the need of the applicant and the chance of the relief being a permanent benefit are the main things to consider, is likely to give a very strong preference to the portrait photographer or his assistant when selecting cases to be helped.

There are, of course, many points of view from which this question may be regarded. Some of our readers may like to place their own views before their fellows, and if so, our pages are open to them. In any case there is nothing to be lost by ventilating the subject, and if its discussion only leads to increasing the number of members of the process unions, it will have done good.

THE PROCESS PHOTOGRAM, 1905.

COMMENCING with the next issue, *The Process Photogram* will be issued in new style, with a page of increased size and in an improved form of setting. These changes will make no difference in the aims and policy of the magazine, which, as hitherto, will present a review of progress in the photo-mechanical crafts and report the news of the trade. In thus commencing its twelfth year, *The Process Photogram* extends a fresh welcome to the support which it has hitherto received from process-workers and illustrators in all parts of the world. When appreciation enters also into that support, the editorial mind may be granted a sense of satisfaction. It is gratifying to find men like Mr. Gall, photographer and photo-engraver, of Adelaide, who, in a letter just received, writes:—"Thank you for the splendid way in which you continue to run *The Process Photogram*."

Digitized by Google

PHOTO-LITHOGRAPHY IN TRI-COLOR.

By F. W. Plews.

EDITORIAL NOTE.

In this and succeeding articles the writer discusses from the practical side a question which just now occupies a prominent place among reproductive matters. Lithography as a competitor with half-tone in three-color is likely to be among the chief factors of reproduction technics of the immediate future, and its claims to recognition are not to be lightly put aside. The characteristic litho richness of the results, the economy obtaining from absence of metal or make-ready, and from the substitution of lithographic duplicates for sets of electros, are in all a formidable set of advantages to place against the virtues of typographic half-tone. Mr. Plews here sets forth the results of a considerable experience in the modern method as it has been approached by a lithographer.

THE photographic methods of both lithographic and typographic processes of three-color may be said to be the same up to a certain point, and it will not be necessary to enter into details of the operations of making the color-sensation negatives. The indirect method of working from transparencies—hitherto much used—will doubtless give way to direct processes as the newest sensitisers may, in the near future, permit the negatives to be made at once through the screen. The use of a chart of colors and of black and white gradations is even more advisable when making the negatives than it is for typographic work, and more importance must be paid to this latter chart than to that of the primary colors. Why I lay great stress upon this, is because I know I am speaking to many litho artists, and my experience with them teaches me the importance of this neutral chart. The litho artist must be asked here to abandon his existing ideas, and in taking on the new let him remember that the blacks are obtained from equal portions of the three primary printing colors superposed, the neutral greys are obtained by diluting these colors equally, or, what is the same thing, the negative screen will give tints of equal strength in the corresponding portions of our composite picture. This is something which the ordinary litho artist does not seem to grasp until he has had a few weeks' experience in this method. It is advisable to have several of these charts on different papers, to meet the varying demands of our copy. Some copies may be on Bristol board, others upon enamelled paper, others may be oil paintings. Where I have a copy painted upon board, I use a set of charts on similar material, using an enamelled set when my copy is such as demands the same. In the case of an oil painting I keep a varnished set for the purpose. My reasons for this will be obvious to those who have had previous experience.

By adopting the above method, one is better able to judge of the correct exposure, the rule being to be guided by the two charts rather than the picture itself. The particular color we are taking should come out clear glass, without veil, on that portion of the negative representing the chart, and the black and neutral greys should be of such a strength that when properly printed and superposed they will reproduce our chart exactly; in other words, the neutrals should be identical in each of our color records. If this be the case then our colors will be as faithful as three-color photography, pure and simple, can make them.

For the illumination of originals, the enclosed arcs are those I have been using recently and the ordinary carbons, giving a very strong violet colored light, which is ideal for the yellow negative.

All matters of exposure and development are to be done with the greatest care possible, as the lithographic process is essentially photographic. A considerable amount of hand work *can* be put in—quite enough to compensate for any inevitable defects of the photographic part of the process—but the method does not look to the fine-etcher to put right the mistakes of the

Digitized by Google

photographic operator. This may be set down as all to the good of the method, for the hand work of the fine-etcher frequently brings the half-tone typographic block into disrepute.

In regard to sensitive materials my own preference is for a panchromatic plate. Certainly I do not advise collodion emulsion, which, in my experience, cannot approach the dry plate in cleanliness, and especially in color rendering.

Personally I have a decided preference for a green filter somewhat bluer than the one supplied in the Sanger Shepherd set, and also bluer than most published formulæ, otherwise the greens have a decided red tone all over them, and if made too blue the yellow will appear somewhat orange in our final proof, hence the necessity for a very careful adjustment with this particular filter. Let it be understood my object is to obtain a result such as will give me the least amount of hand labor afterwards. Unlike the blockmaker, I want no room to work for so-called fine-etching, my object being to get in my negatives the nearest approach to the ideal I possibly can.

In making the red-sensation negative I change the carbons of the arc lamp for those giving a red color, as this shortens the exposure considerably with this particular filter. These carbons are to be obtained from the Westminster Engineering Co.

Before making the transparencies it may be advisable to doctor the negatives a little. If there are any very pure violets in our original, flow over the glass side of the negative some matt varnish in which a little iodine has been dissolved, then scrape the varnish away from those parts which appear correct in color value, leaving the tinted varnish upon those parts we wish to print lighter; tracing paper, blacklead, and stump may also be resorted to if preferred; the negative may also be locally reduced in parts where a little more color may be needed, or any method well known to the retoucher may be made use of.

The positives are made by contact on collodion emulsion, or preferably transparency dry plates. The positive should be an exact reproduction of the negative with a slight additional strength. By this I mean when the negative and positive are put together and held up to the light, the positive should show slightly in excess of the negative. When we have produced our set of positives, they may be dried, and if not quite satisfactory, they may be rubbed down with spirit and a tuft of wool, or reduced locally by well known methods, then varnished with retouching medium, and if anything requires emphasising, it may be done now with pencil and stump. Usually I find in water color painting the flesh tones require a little smoothing up, otherwise the stippled effect the painter has got will be somewhat exaggerated. In fact, most of the work which may be said to be the equivalent of fine-etching may be done at this stage. In making the screen negatives we shall require a rotary transparency holder, placed a short distance in front of the copyboard, or, if we have two screens ruled at the required angle we shall not need the rotary movement. Pin a sheet of white paper upon the copyboard to illuminate the transparency by reflected light; the space between the holder and the camera is covered with a black cloth, allowing no other light to pass through the lens but that through the transparency. The usual method of wet-plate screen negative making may be adopted with one exception, namely, as our prints are to be made on litho-zinc plates or aluminium plates—the latter, perhaps, for preference, though, in some respects, the zinc has certain advantages—it will be necessary under these conditions to make our half-tone negatives a little harder; or, to put it plainer, as we have not the same amount of power at our command in the line etching of the aluminium plate as in the etching of a copper-block, and also as our high-light dots have not to be made larger on the negative to allow for the necessary depth and consequent fining down of

Digitized by Google

dot, as in the copper etching, we must obtain on our negative the nearest equivalent to the finished result of the blockmaker, and leave the rest to the best means at our command at present, which will be explained later. Let us now suppose we have got our negatives satisfactory; we may proceed with the printing, and until one becomes more acquainted with the newer method of working, it would be advisable to prove a set. I might mention here a great deal can be done even with a half-tone negative. If we require to lighten a tint all we have to do is to flow over the glass side of negative the tinted matt varnish, and it is astonishing what can be done in those tints which are represented on the negative by dot just joined together, etc., but it is no good attempting to lighten a tone by this method when the dot is separated from its neighbor. The explanation of this is, that owing to the half-tone dot being slightly vignetted, the varnish does not allow the fringes to print, but only the centre of the transparent dot, thus reducing the size of the dot. This is a very successful method for brightening a print when somewhat flat. Of course, the varnish must be scraped away from those parts of the negative where it is known to be satisfactory.

The reader must not think the negatives and positives require all this labor in every stage. Not at all; but I briefly mention the various methods I have worked, knowing that at times errors may crop up at any stage, and we may then apply the remedy.

(*To be continued.*)

LANTERN SLIDES FROM SCREEN NEGATIVES— A NEW PROCESS BY F. E. IVES.

By F. C. Beach, New York.

MR. FRED E. IVES of Philadelphia gave a very interesting talk recently at the Camera Club on an improved method that he has devised for making a tri-colored lantern slide, something on the basis of printing in three colors. His explanation was, that he made three negatives in the usual way through the different screens at one time, and from the negative sensitive to red he makes a bichromated gelatine print on glass in about ten seconds when exposed to strong sunlight. This he then dips into an aniline bath of blue color, and the blue acts as a ground for the balance of the colors. When this is dry it is varnished over with an impervious varnish, and dried, and then it is coated with a gelatine bichromate solution, and that is printed from the other blue (sensitive) negative, which is made in dots, as in the half-tone process; in fact, it is a negative which is reproduced from the original negative in dots; and after this is made and washed out, it is dipped in a yellow solution, so that the yellow and blue then are combined, so to speak, the blue being the ground and the yellow being on top of it in minute dots. Then to get the red he takes what would be the cover-glass of the lantern slide and sensitises that with a bichromate of gelatine solution and prints from the red half-tone negative, made from the original negative in dots, upon that in about ten seconds to strong sunlight. He then washes that out in the usual way, and dyes that with the crimson red, I believe. This particular image is printed from a negative reversed in position, so that when the image is imprinted on the cover-glass it will be in the same position as the rest of the images previously printed. It is then bound together like an ordinary lantern slide cover against the two other colors, and properly registered, so that all

Digitized by Google

the lines harmonise, and is then bound up, and you have immediately a lantern slide in colors of nature.

He had several examples that he showed on the screen, and they came out very well. It appears that the blue screen prevents the yellow dots and the red dots from showing on the screen; at the same time it produces the proper harmony of color. He showed a picture and said the three negatives of it were taken at one time at one second exposure (which, you know, is very short for this work), representing a landscape with green trees and a house alongside the road, and the effect was very good; it came out in good shape.

I do not know that it is quite as simple as the proposed Lumière process of having a stipple tri-colored screen formed on the back of the plate, but Mr. Ives claimed that it was commercially a success, and slides could be quickly and easily made.

[To those firms who have a large number of three-color half-tone negatives of pictures, or other interesting subjects, we suggest this as a promising side line when they are not very busy. It would be quite simple to rig these half-tone negatives up, either behind a condenser and electric light, or to a skylight, and reduce them in the camera to lantern slide size, sensitising a plate with bichromate in the usual way, developing, staining and mounting. Pictures could then be sold as lantern slides at what we should think would be a profit, making it worth while, as there would be no more difficulty in making these dot slides than there is in making the usual dot printing in the fish-glue enamel print on metal.—EDS.]

A METALLIC RESIST.

THE difference in the behaviour of metals to acids and other etching liquids is the basis of a process for the chemical engraving of rollers (of copper, brass or zinc) intended for the printing of fabrics, wall-papers, etc. The design is first made in a lithographic or other water-resistant ink and transferred to the roller. Then it is washed in order to remove completely any trace of gum or size on the transfer paper and so prepare the metal for the deposition of the lead or tin which is to form the resist. This washing liquid may consist of acidulated water or other liquids capable of dissolving size or gum. The lead or tin is now deposited electrolytically, the ink then removed by a solvent such as turpentine, and the copper or other metal etched. This etching, explains the inventor of the process, M. J. A. Deigey of 31 Rue de l'Hotel de Ville, Lyons, who has patented the process, is done by acids or liquids which do not attack lead or tin, but only the exposed copper, brass, or zinc. These agents or acids are numerous, the more important being the double cyanides of copper and potassium, chromic acid, and the like, and they may be employed with or without an electric current. The operator must make a judicious selection of the acid or liquid to be employed, according to the nature of the design to be engraved, and its depth or fineness.

This method of engraving, it is claimed, allows of any reproductions of photograms, portraits, landscapes, drawings of all kinds, and the like, to be rapidly and economically obtained. Its importance is more particularly remarkable for reproduction in large numbers, such, for instance, as illustrated catalogues, post cards, postage stamps, cheques, vignettes, etc., printed on continuous paper by means of engraved rollers, and also for printing paper-hangings and reproductions by processes derived from photography of pictures, engravings, or any kind of subjects on plates or metallic rollers. It also allows rollers, to be employed for printing newspapers and other

Digitized by Google

publications on rotary printing presses, to be rapidly obtained, this process enabling the making of blocks of antimonial lead at present customary to be dispensed with. For this purpose it is sufficient to set up on a sheet of paper the text to be printed, in a greasy ink, and transfer it to the roller in the manner hereinbefore indicated.

The process may be applied to existing engravings—that is to say, engravings (or designs) made by hand, lithography or photo-lithography on the stone. These drawings or designs are transferred to the roller by the usual means and the ink fixed in the manner stated, and then the metallic resist is applied. After the resist is obtained the ink is removed and the design engraved to the depth required.

HALF-TONE OVERLAYS—AN APPRECIATION.

WRITING in *The American Printer*, Mr. G. Sherman reviews past and present methods of producing a photo-mechanical overlay, an outcome of modern printing requirements which should interest the blockmaker as much as the machine-man:—

"One of the first results of endeavor along this line to receive actual recognition consisted of an ingenious packing, made of rubber and composition, with an interior layer of closely woven, minute springs. The manufacturers claim much for this improvement, even going so far as to announce that it entirely replaces hand-cut overlays. It is in use in many representative printing establishments in various cities, and the fact that to apply it the printer must first have the cylinders of his presses turned down slightly would seem to indicate the faith those who are using it have in the process.

"Later, someone placed a secret process on the market in the shape of a powder. The idea is of the nature of a bronzing process. The forme is put to press and an impression is taken on an overlay sheet in a special bronze size made for the purpose. An application of the powder to the sheet thus printed is supposed to give a coating that will act as a cut-out overlay, reducing high-lights and darkening shades. A good deal of scraping off in spots containing an excessive accumulation is necessary, and, withal, the finished job is much inferior to a first-class hand-cut make-ready. Nevertheless, this is one step in the direction of solving the problem.

"Further evidence to prove the assertion that the process overlay will eventually supersede the hand-cut tissue for a universal make-ready has been demonstrated by recent successes attained with the De Vinne-Bierstadt process. Considered from the standpoint of results attainable within a limited amount of time consumed, this overlay might be adjudged the climax of perfection. But even in this process there is still room for minimising the item of cost, which lies mainly in the material used, and proprietary rights. Much research on the part of Theodore B. De Vinne, both in America and abroad, developed lines along which Edward Bierstadt experimented for years, finally evolving a practically perfect process overlay. It was discovered that by taking a proof of a half-tone on a translucent medium, a transparency was secured that fulfilled all the desired purposes of a negative. By sensitising a sheet of gelatine-coated glass and exposing it to the light through the transparently-printed picture, and then placing the gelatine plate in water, its surface began to swell. A cast of this raised surface was then made by pouring plaster-of-Paris over it. The result was a perfect matrix, showing all the high-lights and shades of the half-tone in relief. The overlay was made from this matrix by placing guttapercha

Digitized by Google

with a paper backing over it and subjecting the whole to pressure under a heated plate. The De Vinne Press and a number of other New York printers are using this overlay with success.

"Acting in the capacity of stone hand for a large Chicago concern placed me in close touch with Messrs. Gilbert and Harris during their experimenting with a new zinc overlay. While the latter process produces excellent results with half-tones, there is a tendency to shorten the life of the cut. Thin sheets of zinc are laid on all of the half-tones in the forme, and an inked impression is taken directly on the metal. These zinc plates are then sifted in dragon's blood, and after carefully painting their backs, edges and all other unnecessarily exposed parts, they are immersed in nitric acid, after the method employed in making zinc etchings. The method is an excellent one, and I have seen overlays made and attached ready for printing in less than half an hour, that would have consumed an entire day by the hand-cut process. Besides this, I believe that the results obtainable after a little experience with this manner of overlay will far surpass the average tissue make-ready; and I look forward with interest to further developments along this line of investigation.

"Another device for saving make-ready is the Rhodes blanket. Its main constituent is rubber, so treated by special processes of manufacturing as to make a printing surface that readily adapts itself to almost any requirement.

"These various ideas are food for thought to the ingenious pressman, and I believe they will lead on to the production of a paper overlay that will surpass the best hand-cut make-ready, and eventually supersede present methods entirely. As a suggestion to experimenting pressmen I find it opportune to mention partially successful results obtained by the writer with a paper process overlay. I find that by covering a sheet of thin press-board with tinfoil, so that no portion of it remains exposed, we have the nucleus of what may develop into a promising experiment. In my initial trials I took a half-tone proof with aluminium ink on heavy news. Tinfoil and aluminium ink both resist the action of sulphuric acid. Working on the strength of this knowledge I glued this proof, face out, to the tinfoil pressboard, being careful to use a paste that would also resist the acid, the following being a good recipe for the same:—

"Dissolve a piece of gum mastic, the size of a hickory nut, in as much spirits of wine as will suffice to make it liquid. In another vessel dissolve, in brandy, as much isinglass, previously softened in water, as will be required to make two ounces of strong glue. Add to the latter two bits of gum ammoniac, which must be kneaded until dissolved. Mix the whole in a vessel over a fire. Keep well corked, and when using set the bottle in hot water.

"By immersing the tinfoil-covered pressboard with the aluminium proof glued thereon, in sulphuric acid, a decomposition and discoloration begin to set into all portions of the proof paper not covered with aluminium ink. After removing the pressboard, however, I found great difficulty in drying out the acid. This done, finally it was an easy matter to brush off the brown ash blisters, leaving a perfect cut-out overlay intact on the tinfoil surface of the pressboard. It developed in my mind, however, that the method was impracticable for everyday use, but I saw clearly a field for experimenting with paper that might develop something successful by bringing the proper substances to act upon each other. For instance, a good idea might be a process of affixing a similar proof to a thin copper sheet of the hair-space type and burning away the undesirable parts. These are only suggestions for experimenting, and I hope they will be looked upon as such if any readers feel inclined to try them."

Digitized by Google

TRANSFER METHODS APPLIED TO HALF-TONE, PHOTO-LITHO, ETC.

A process for which the inventor claims cheapness and applicability in a variety of ways is described in the patent specification (17,967, 1904) just issued. The inventor is Adam Stephan of Bourke Street, Waverley, near Sydney, New South Wales, and the results obtained by the process are stated to be due to the inking of a transfer medium (waxed with a gelatine emulsion so as to give a granulated reticulation), with a soft nap litho-roller before and after taking the print from the original negative, and manipulating the transfer medium with a hard dry roller also, before taking a print from the original negative.

Described in very nearly the inventor's words the process is as follows:—

For multiple color chromo photo-lithographic, or multiple color letterpress printing, three photographic negatives are generally taken by me from the picture or object to be copied, through color filters only, for the set of three colors, on ordinary dry plates, celluloid films, or wet collodion plates.

The emulsion I prepare for coating the transfer medium consists of one ounce, preferably of Nelson's patent opaque gelatine, or any good soft gelatine soaked for half an hour in five, five and a half, six, or six and a half ounces of cold water, according to the grade of grain required, six and a half ounces being used for the finest grain. To this solution is added, whilst at a temperature of 120° Fahrenheit, say, two grains of common alum dissolved in one ounce of warm water, the whole being strained.

In carrying out my process I have prepared for use a series of sheets or rolls of paper, or pliable celluloid films or pliable sheets of thin metal, which may be considered as Nos. 1, 2, 3, and 4, No. 1 giving the finest grain. I take any one of these numbers which I may consider best suited for the prints to be obtained, sensitise the same with a solution of bichromate of potash, and when dry I lay the same face upwards and held at one end with a clip on an even slab of plate glass, or a litho-stone. I then pass a soft nap litho-roller, worked up in a good stiff re-transfer ink, over the surface until the sheet is evenly coated.

I then pass over the surface a hard smooth litho-roller with or without a little stiff ink, until the grain required shows very dimly. The inking of the sheet with such soft nap litho-roller, together with the subsequent use of the hard litho-roller, enables me to get the grade of grain required, which remains intact and unimpaired in the course of the subsequent process. If using the hard roller with light pressure, the grain is light, or comparatively light, according to the granulation of the surface; if using such roller with increased pressure the grain is coarse, or comparatively coarse; and I can use the hard roller so as to give a fine, or a comparatively fine, grain on one part, and a coarse, or comparatively coarse, grain on the other. The time occupied in so coating with ink and the use of the rollers is about one minute, and the transfer medium is then complete for printing. The sheets or transfer medium so prepared are then printed as bichromate prints from the original color negatives. The prints so taken are re-inked with the soft nap litho-roller and soaked from five to thirty minutes in water, developed with soft sponges and hung up to dry, and when dry are ready for transfer to the litho-stone or metal, from which prints will be taken; or the transfer may be made to copper, zinc, or other metal, and be etched in the ordinary manner for letterpress printing. The transfers are slightly damped in a damp book in ordinary manner before transferring to stone or metal.

Digitized by Google

The process is applicable to color work in which two negatives taken through color filters, or one negative only taken through a color filter, may be required for the picture or object to be copied.

For special, scientific, or soft tint work, the original negatives taken through the known color filters can be used for any further shades of color other than pure yellow, blue or red, by increased or less exposure when printing the transfer medium from the original negative.

By means of the process described, a more even tone and color, besides giving more complete detail, can be procured than in the half-tone hitherto produced by screens or otherwise in photo-mechanical processes, but the same would come under the general designation of half-tone work.

The process described is the same for photo-lithography in half-tone other than color work, with the use of one original negative.

All classes of half-tone work can be done in the three or more colors from an inch in size up to the largest printing surface obtainable, and a number of different subjects can be transferred to a litho-stone or a metal plate for printing, engraving, or etching.

Except for pictures of small size, I use, preferably, pliable sheets of celluloid, which do not stretch or shrink like paper in the process of transfer, in which case the colors do not fit when the print, if large, is taken in the three different colors. Pliable metal plates may also be used for very large transfer mediums, but not with the advantage attending the use of celluloid. The celluloid or metal films may be cleaned and used again repeatedly.

Prints in three colors can be taken from a litho-stone or plate, and representations can be etched on metal to be printed as blocks with letter-press, without requiring any manipulation by the artist. Transfer mediums prepared and treated in the manner stated, and printed from the original negatives, give perfect three-color work; furnishing the grain or graduated tone required, gradations from heavy shades to high-lights, and leaving all lines, curves, angles, and fine points sharp and clear, instead of the same being broken down, obliterated, blurred, or ragged. The negatives control the transfer medium and the grain to the finest hair line; and although the grain may be coarse, no matter how open the grain for large work such as bill posters, etc., lines and details are sharp, and high-lights clear.

The Annual Students' Supper of the L.C.C. School of Photo-Engraving in Bolt Court is fixed for the 10th December, when Mr. George Frampton will take the chair.

High Reliefs.—In the course of a note read before the Union of French Photographic Societies at Nancy, Professor Namias explained the method with which he had been most successful in obtaining high relief in a photographic manner. In place of gelatine alone he uses a mixture of gelatine and gum. This latter is applied to glass and sensitised in the usual way with potassium bichromate. Printing is done in sunlight, and the exposed plate immersed in a solution of alum to produce the relief. It is found that of the many substances recommended as tending to the production of a high relief, gum arabic was the only one of any practical use. Sugar, often advised, acted in an undesirable way, as it led to insolubilisation of the gelatine during the drying of the plate. Boiled starch and gum tragacanth, even in small quantity, decrease the fluidity of the solution and make uniform coating difficult without at the same time adding to the relief.

The gum arabic should not be used in greater proportion than that of one half the weight of the gelatine.

Professor Namias' note contributes to the interest of the photo-sculpture of Signor Baese, of which a full account was given in these pages recently (*The Process Photogram*, September, 1904, page 131).

Digitized by Google

SOME QUESTIONS— PERTINENT AND IMPERTINENT.

By "The Town Traveller."

THIS is not a conundrum, but a plain business question. What is the value of the goodwill of a good half-tone connection at a price-average of fourpence? What sort of connection is a "good" one, at this price? Is it a case of "the smaller the better"? These queries arose some months ago when a certain business was in the market, and they bring us round to the old price-cutting problem. Is it worth the while of anyone to labor night and day to build up a big connection in fourpenny half-tone?

Of course there is some half-tone work done at this price which may be said to "pay," because it is taken as being additional to regular business, and is not charged with its fair share of 'stab exes. Of course, too, we have seen threepenny-on-zinc and fourpenny-on-copper pushed as leading lines—by firms whose places know them no more. But! *Is* it good enough as the basis for a business facing all the changes and chances of orders big and small, seasons slack as well as busy, with cost of making business, cost of credit and bad debts, cost of management and all incidentals? Well, is it?

. . . . . .

There was some talk, twelve months ago, of a possible agreement between the half-toners and an association representing the men. The sound employers, who wanted fair prices that they might pay good wages and have good bank balances and be able to sleep soundly at night, were to agree upon a scale, and were to report to the men's union any cutting firm. The union was then to withdraw the men until such time as the offending firm chose fair prices and opulence, or went into bankruptcy. To strengthen the union, the fair employers were to agree that they would have none but unionists in their concerns. The scheme had promising features. It provided a means of coercing the cutters, which has so often been desired by meetings of the process craft; and it promised a great incentive to men to join the union, with many advantages in prospect.

As poor old Hans Godfrey Leland Breitmann used to ask, "Where ish dot barty now?" Has the scheme been placed in Ally Sloper's twincubator and deserted by its unnatural parents? Unnatural parents please reply:—telegrams and cables, Fotometro, London.

. . . . . .

"The best season ever known," is the report of one of our good half-tone houses on the publishing season which closed (for them) about the end of October, and which is (for the publishers) now at its height. Enquiry amongst other process firms brings confirmation of the same report, and even the most pessimistic man I have met admits that the past summer has been "a bit better" than most summer seasons. Curiously enough, the increase in the use of half-tones for book illustration is largely the result of bad trade. The public has been hard hit (or imagines it has, which is much the same thing) during the past few years of repentance for its war fever, and can only afford (or thinks it can) cheaper books than it used to buy. So the beautifully produced volumes at half a guinea, a guinea, and upwards, have decreased in number, while there is an enormous increase in the number of books at from half a crown to six shillings. The publisher who used to do four or five handsome table-books, now does fifteen or twenty

Digitized by Google

books of travel, art, biography or what not. And for six shillings—which the pernicious discount system may reduce to four-and-six—he gives about 350 pages of text, with, in addition, fifty to sixty half-tone plates. The great change in this direction has coincided with an increase in the use of half-tone for "miscellaneous juveniles." The cheap book for boys or girls which once was advertised "with frontispiece" is now "with eight (or sixteen) plates"; and the book of adventure which used to be called "lavishly illustrated" because it had sixteen full-page pictures, now needs its forty-eight or sixty-four, and may also have a lot of incidentals in the text.

If you, reader, are a half-toner, and if you did not get your share of the book-publishers' octavos this year, be sure that someone else got it, and "Wake up! John Bull."

. . . . . .

It is worth while to consider, when December brings around the grog, and the thinking-cap, and the balance sheets, and the—— did anyone mention duns? But no! Still, it *is* worth while to consider whether the year has been as good as it might have been, and if not, why not. Good old Josh Billings used to say:—

"I notis that when a feller runs hiz hed agin a post, he cusses the post fust, then he cusses all creation next, an' last of all he never thinks of cussin' hisself."

If the quotation is not letter-perfect, the meaning is there all right. Some may wonder what this has to do with the subject. Never mind! Read on.

1st. It is a fact that the use of half-tones in the older weekly and monthly "illustrateds" has been greater in 1904 than in any previous year.

2nd. It is a fact that some new illustrated journals have been added in 1904.

3rd. It is a fact that the production of half-tone catalogues, price lists, etc., has materially increased in 1904.

4th. It is a fact that the production of half-tones for post cards (a new line) has been a big trade in itself in 1904.

5th. It is a fact that the book-publishers' use of half-tones has grown immensely (probably doubled) in 1904.

6th. It is a fact that every old demand for half-tones has increased, and some new ones have been added in 1904.

7th. It is a fact that the average cost of production of half-tones in well-managed firms has somewhat decreased in 1904.

With the result that:—

8th. IT IS A FACT THAT BLOCKMAKERS' NET PROFITS HAVE MATERIALLY INCREASED IN 1904.

What? That's a lie, is it? Net profits have come down, have they? If so, that is Josh Billings' post. Some one has run his head against it, and, in the words of Poe:—

THOU ART THE MAN.

Well, what's going to be done about it for next year? If there are going to be any new-year resolutions, make them now, when the old year has yet a month to run; then there will be a clear thirteen months of the good new year; and to quote another classic poet:—

> "The best of all ways to lengthen our days
> Is to steal a few hours from the night, my dear."

Digitized by Google

SCREEN SWEATING.

Process Work, in the page it sets aside for practical notes, publishes the following answer to the question "What is the cause of 'sweating' of the screen and the best way to avoid it?"

"This trouble is generally noticeable when the dark-room and studio are situated on different floors, and the sweating of the screen is accounted for by the difference of temperature in the two rooms, but it is also noticeable where they are both situated on the same floor, especially in damp and cold weather, where the heavy moisture of the air will soon find a deposit on the screen, the coldness and moisture of the plates also accelerating the trouble. A good preventative of the trouble is to slightly warm your screen, only just enough though so that when you breathe on it, it will not stop on the screen but quickly disappear. Then rub a piece of soft cloth on to a lump of white wax, and then rub the surface of the screen well all over with the piece of waxed cloth, and finally polish in the usual way. Also keep your screen as far from the plate as convenient until you start exposing."

WET COLLODION *versus* BROMIDE EMULSION.

In the course of some notes on a cognate theme, the *Zeitschrift für Reproduktionstechnik* has occasion to contrast the properties of wet collodion plates and emulsion of silver bromide in gelatine or collodion. As illustrating the fundamental differences between these materials, one or two interesting experiments are mentioned which it is well to set down here, as one of them crucifies a fallacy of long standing, which is repeated over and over again in current photographic literature.

In comparison with the bromide plate (says the *Zeitschrift*) the iodide film of wet collodion stands in the relation of an isochromatic plate to one of "ordinary" quality. The wet collodion is sensitive chiefly to the violet and ultra-violet: the gelatine plate commences its sensitiveness about where the wet collodion leaves off, and continues it up to the beginning of the green of the spectrum. Moreover, the wet collodion plate is greatly influenced by the color-tone of the original in the matter of correct exposure. Take two originals, one brown and the other of bluish tone. Make negatives of the pair on a dry plate, and it will be seen that the brown print requires a slightly longer exposure. Give the same relative exposures on a wet collodion plate, and you will find that if the bluish print is correctly exposed, the brown one is very strongly undertimed. The same thing takes place in copying any kind of colored original.

If we photograph a not too highly colored chromo-lithograph on a dry plate the tone-reproduction of the colors will leave much to be desired, but the same subject made on a wet plate shows up the latter, greatly to its disadvantage compared with the dry plate. The rendering of the pure blue, and especially of the dark greens, is far better on the dry plate. The wet plate shows any colored tone extremely dark compared with the whites. The dry plate is much more correct, at any rate for blue and blue-green.

A still more interesting form of the same experiment is as follows:—Take a piece of gelatine paper, say a bit of transfer paper, and make a few

Digitized by Google

characters upon it with a camel-hair brush, dipped in an acidified solution of sulphate of quinine. The writing will be invisible to the eye. The quinine sulphate absorbs only ultra-violet light. Now photograph the paper on a dry plate. The characters will be invisible, or visible only to the faintest extent. In the wet-plate negative, on the other hand, the letters will show strongly as transparent lines, a proof that they have acted less strongly than the paper ground.

This experiment can be made still more striking by using a lens of quartz; the time of exposure is then considerably shortened, and the characters then appear as if written in black ink.

In process work this property of wet collodion is very inconvenient. Every practical man knows the difficulties involved in copying originals in which the ground is yellow only to the slightest extent. Such originals, especially if they are not of great strength, can scarcely ever be handled with success on wet collodion. Half-tone originals also of brown tone on pure white paper offer endless difficulties to the wet collodion worker. The copies are hard and the tones falsely reproduced. In such cases as these a good collodion emulsion dyed with eosin will do all that is desired.

Current Topics

Klimsch's "Jahrbuch" for 1904 is announced at the price of 5 marks, if ordered on or before the day of publication. Messrs. Klimsch's agents, Hunters, Ltd., of Poppin's Court, E.C., supply the *Jahrbuch* at 5s. nett; postage extra.

Zimalium, according to the *Mechaniker*, is a new alloy of aluminium and magnesium, with a small percentage of zinc, possessing a specific gravity of 2·65 to 2·75. It is harder than aluminium, and takes a better polish. Also it is ten per cent. cheaper than aluminium, though it is not so resistant of chemical action, and has a lesser electric conductivity.

Acrography.—The progress of the system of non-chemical half-tone engraving, of which we have fully informed our readers through several articles, has been impeded by the illness of the inventor, Mr. N. S. Amstütz. On his return to his native country some months ago Mr. Amstütz suffered hard things from the American winter, but he is now fortunately fully recovered and able to attend to business.

The Bolt Court Exhibit at St. Louis has been awarded a gold medal, which is thus the fourth mark of distinction gained by the students in the L.C.C. School during the present year. The others are a silver medal and special award at the International Exhibition of the Printing and Stationery Trades, a medal at the Exhibition organised by the Milan Typographical Institute, and a plaque at the Exhibition of the Comité d'Études Photochromiques.

Lectures at Bolt Court in December.—The Thursday evening lectures at the L.C.C. School of Photo-Engraving for the current month are as follows:—

1st.—"The Influence of Process Engraving upon the Art of Printing." By W. Boutall.

8th.—"Press Illustrations, with Points about Copyright." By H. Snowden Ward, Editor of *The Process Photogram*.

15th.—"Making Illustrations in India." By Major-General Waterhouse.

The lectures commence at 8 o'clock, and admission is free on application to the Principal.

Half-tone in great simplicity is the claim made for the process of a Monsieur Brard, who worked it all out ten years ago, but who, by reason of certain unfortunate circumstances, was unable to look after the commercial exploitation of the process. The *Photo-Revue* has now taken the matter up, and explains that the method is one which is for the amateur, that it is free from the expense of modern screen half-tone, but that, at the same time, it will not approach the usual process in perfection of result. Our contemporary, however, proposes to explain the method in full detail, and we shall then be able to say on what the process is based. At present all that is disclosed is that an artificial sulphide of iron, known as pyritol, is used, and that certain grained and ungrained gelatine plates are necessary also.

Digitized by Google

Exposures by Ultra-violet Light.—It may interest some of our readers to know that the portrait taken entirely by ultra-violet light, by Mr. Edgar Senior, which was shown at the R.P.S. exhibition this year, was given an exposure of five minutes. Prof. R. W. Wood's screen, cutting off all visible radiations, was used. The plate was a Cadett "Lightning," and the lens one of the portrait type working at *f*/4. The sitter was illuminated with an electric arc light.

An Italian Bolt Court.—The School of Photography and Process in Milan has been transferred to new quarters at No. 10 Via Goldoni. The course is divided into two parts: one for those taking up typographic processes, and the other for workers of plate processes, collotype and lithography. The principal of the school is Dr Nino Lucini, and the fee for a complete course is only 1s. 7d. for trade-students. The fees for practical work are based on a monthly subscription to the workrooms of 2s. 6d.

Bolt Court Appointment.—By a minute of the Education Board of the London County Council, Mr. A. J. Bull has been appointed to devote the whole of his time to the duties of assistant to the Principal. Mr. Bull has been closely associated with the work of the Bolt Court School for some time past, and his name is familiar to readers of recent literature of orthochromatism. The concentration of his interests with Mr. Newton in the L.C.C. School is a fact on which the students and staff at that establishment may be congratulated.

Hesse's Treatise on Chromo-Lithography.—Parts II. and III. of this work have now appeared from the press of W. Knapp, Halle, a/S, Germany. Part II. treats of lithographic drawing methods as applied to chromo-litho, and contains the supplemental plate of a chalk lithograph printed on a tint by Josef Eberle of Vienna. Part III. continues the subject, and commences the consideration of lithographic color printing methods. The whole subject is treated in a remarkably comprehensive manner. The price of each part is M. 1.50 (1s. 6d.).

Gall's "Glimpses of Adelaide and South Australia" for 1904 reaches us from Mr. Ernest Gall, "photographer, photo-engraver and photo-illustrator," of Alma Chambers, Adelaide, to whose enterprise and initiative we have drawn attention more than once. Uniform with this view book is another—Gall's *South Australian Scenes*—which sells at the same popular price of one shilling. The very effective cover of the latter, Mr. Gall tells us, is from three line blocks made from the same negative: by printing both the green and red plate over certain parts of the design a good brown is obtained.

Mr. Gall sends us also some specimens of his illustrating work done for commercial purposes, which maintains us in the opinion we have long held of his versatility.

Direct Copying on Aluminium.—Messrs. Klimsch & Co., of Frankfort, have introduced a process which should receive the attention of lithographers and photo-lithographers, inasmuch as the originals can be copied directly on to the aluminium plate by a photographic process, thus obviating any distortion. The printing process is such as can be easily carried out, and the sensitiveness of the prepared aluminium plate is sufficient to permit of brief exposures to daylight, or of printing by the electric arc. A number of plates which we have seen show the very fine work of which the process is capable, for a series of maps containing much fine detail is one of the best testimonies which can be put forward as to the ability of the process to deal with originals which are almost half-tone in their character. As it is, the process claims to reproduce only line work in its different varieties. The original, of course, must be free from printing or other drawing on its reverse side, and it must not be of such exceptional thickness that light cannot penetrate it. But there is a good deal of latitude in this latter respect, and it is found that so stout a paper as "Whatman's drawing" may serve as an original without embarrassing the operator.

The British agents for the process are Messrs. Hunters, Ltd., Poppin's Court, Fleet Street, E.C., who will supply information as to the terms on which licenses are granted, and will be glad to take up technical correspondence.

A recent French patent of Klimsch & Co. mentions a process (apparently descriptive of the above) as depending on a film of bichromated gelatine applied to the printing plate of aluminium. The print, thus made, is developed by washing, and then prepared to receive an ink on the parts corresponding to the lines of the design. It has hitherto been very difficult to obtain sufficient adherence of the ink to these non-exposed portions, and the present process bases its success on the special measures taken to this end. The surface of the plate is treated with an acid which is almost without action on the metal, and there is therefore no danger of the exposed film sustaining injury.

The results from bad originals can be improved by exposing through a matt or yellow glass, and in the case of colored originals the sensitiveness of the plate can be modified in the different portions by the addition of appropriate dyes. In this way certain colors can be omitted from the copy, or all of a number reproduced, a feature of the process which is not possessed by others of a like nature.

Lastly, if a screen is used in front of the original, or between the original and the plate, the process can be applied to half-tone work.

Digitized by Google

Photo-engraving in the Phillipplnes.—According to a letter to *The Inland Printer* from Homer L. Knight, photo-mechanical work is now a department of the Bureau of Public Printing in Manila, and boys who pass the Civil Service examination are apprenticed in this department and gradually advanced. Mr. Knight, who is assistant to the principal, Mr Charles F. Lanman, reports that "the boys are rapidly acquiring a knowledge of the business. They are very anxious to learn all branches of the art, although some of them are better fitted for one particular branch. The Bureau is equipped with the latest and best machinery, and the photo-engraving rooms are large and well lighted and pleasantly located. It may not be a very long time before the Philipinos will be able to do a great amount of the work entirely unaided, although it will necessarily be some time before they will learn the causes and remedies for 'oyster shells,' 'streaks,' 'smut,' 'scum,' 'comets,' enamel 'lifting,' 'chewed' cuts, and the hundred and one trials to which the photo-engraver is subjected."

Cement for Dishes.—As a cement for dishes there is nothing to equal marine glue (says a writer in *Le Photogramme*) made from shellac and rubber. The proportions of the two ingredients may vary from one to three parts of the rubber to ten of the shellac. The greater the proportion of rubber, the more elastic the cement. The two ingredients, if of the proper quality, are not soluble in the same liquid. The shellac is placed in rectified wood alcohol (wood spirit), and dissolved in the smallest possible quantity thereof. It is then evaporated on a water bath to a thick syrup. The rubber is placed in white or rectified turpentine, a few drops of which, when placed in a capsule, should evaporate without leaving any residue. About ten c.c. of turps are taken per gramme of rubber. If of good quality the rubber will swell up to thirty times its volume in the course of two days, but it should not dissolve entirely. It is then gently heated over a closed stove, and stirred vigorously to completely disintegrate it. The shellac syrup is then warmed and the rubber added to it, mixing the two thoroughly with a wooden spatula. The mixture should now be stored, and applied like varnish. To use it as a solid cement it is first warmed in a metal dish until it becomes pasty. It may be noted in conclusion that turpentine is chosen as the solvent of the rubber, for the reason that its boiling point is 160°, and so it can be used without the danger involved in the employment of benzene or carbon bisulphide.

Photographic Cameos.—"The making of cameos," says C. E. Mann in *Trade News*, "is not only a simple novelty, but it is one that pays. The process is easily worked, and a little practice will enable one to become an expert. I use a 5 by 4 plate, which is sufficiently large. To make a medallion to attach to a watch chain, bracelet, or brooch, proceed as follows: Pose the sitter in a strong light. Powder the hair, eyebrows and beard, if a gentleman. Have the neck bare to the shoulder and make a profile view, using a black background, about the size of the head of the goddess on a silver half-dollar. Under-expose slightly and develop tolerably hard. When the negative is dry, paste thereon a round cut-out of thin black paper with the opening just large enough to show the head and neck. Then take a clean glass plate of the same size as the negative, and cover it with a very thick solution of gelatine, applying it in the same manner as varnishing a negative. When dry, repeat the operation. See that the plate is coated evenly, and remember that the thicker the gelatine the better the results will be. When the plate is dried, immerse in a sensitised solution of bichromate of potash, ½ oz.; strong ammonia, 30 minims; water, 8 oz. This solution must be kept in a dark place; as its keeping qualities are not good, it is advisable to mix fresh each time. The gelatine-coated plate is immersed in the above solution, in a dark room, by yellow light only, for three minutes, and allowed to dry in the dark. When dry, place in contact with the negative in a printing frame in the same manner as you would use for printing-out paper, being sure that the contact is perfect. Expose to direct sunlight for about ten minutes. The time of exposure depends, of course, altogether upon the density of the negative. An ordinary negative will require about the same timed exposure as for carbon print. After printing, place the gelatine plate in the dark in running water until the bichromate is thoroughly eliminated, then place it in a shallow tray of water, to which a few drops of glycerine have been added. Allow it to remain there for fifteen minutes, when it should be removed and placed in a drying rack to allow the superfluous water to drain off. The image can now be seen standing out in relief. Now, place it in an empty dry-plate box of the same size as the plate; then mix some plaster-of-Paris, not too thick, and pour in the box over the plate. When the plaster has hardened, which will be in about twenty minutes, break away the sides of the box and remove the plate very carefully from the plaster cast. From this cast the cameo is made—almost any metal can be used. For the first experiments, lead is the best metal to use, as it is very easily melted. One can make a few samples of this metal, but my regular orders calling for silver or gold cameos I usually give to my jeweller, as he, having a furnace and crucibles, can secure better and cleaner results. If the seal is wanted, take the plaster cast, warm it somewhat, and brush the same with olive oil, being careful not to use too much oil, and make another plaster impression from it. Use this last cast same as the former one. This process is much easier than it appears at first glance."

Digitized by Google

Vol. 23. No. 131.
Monthly, 6d. Per annum, post free, 8/-
25 cents. Per annum, $2.

JANUARY, 1904.

Entered at New York Post Office as Second-Class Matter, Dec. 31st, 1898.

THE JOHNS HOPKINS HOSPITAL
JAN 2 2 1904
LIBRARY

THE Process Photogram

MODIFIED
COLLOTYPE
FOR
BEGINNERS

ILFORD

LANTERN PLATES
"SPECIAL"
AND "ALPHA"
POPULAR PRICES
OF ALL DEALERS

Made only by
ILFORD, Limited
ILFORD, LONDON, E.

EDITORIAL AND ADVERTISEMENT OFFICES: Effingham House, Arundel Street, Strand, London, W.C.
PUBLISHED FOR THE PHOTOGRAM, LTD. LONDON: Dawbarn & Ward, Ltd., 6 Farringdon Avenue, E.C.
NEW YORK: Spon & Chamberlain, Liberty Building, 123 Liberty Street.

Digitized by Google

For superb results

THE

WELLINGTON

S·C·P

Matt, Glossy, Art White, Art Tinted,
& the new grade, "PORCELAIN" S·C·P

AND

BROMIDES (Platino Matt)

Smooth and Rough, also "Enammo"
For Autumn and Winter Months

Wellington & Ward
Elstree, Herts

NEILL AND CO., LTD., PRINTERS, EDINBURGH.

Digitized by Google

Vol. XI. No. 122.
Monthly, 6d. Per annum, post free, 5s.
25 cents. Per annum, $2.

FEBRUARY, 1904.

Entered at New York Post-Office as Second-Class Matter.

FEB 11 1904

The Process Photogram

TRI-COLOR FILTERS.

COLLOTYPE METHODS.

ILFORD
PLATES
ILFORD
PAPERS
ILFORD
FLAT FILMS
Of All Dealers
Made only by
ILFORD, Limited, ILFORD, LONDON, E.

Editorial and Advertisement Offices: Effingham House, Arundel Street, Strand, London, W.C.
Published for THE PHOTOGRAM, Ltd. London: Dawbarn & Ward, Ltd., 6 Farringdon Avenue, E.C.
New York: Spon & Chamberlain, Liberty Building, 123 Liberty Street.

PAPER MANUFACTURED AND SUPPLIED BY HENRY LINDENMEYR & SONS.

Digitized by Google

Digitized by Google

Digitized by Google

For superb results

THE

WELLINGTON

S·C·P

Matt, Glossy, Art White, Art Tinted,
& the new grade, "PORCELAIN" S·C·P

AND

BROMIDES (Platino Matt)

Smooth and Rough, also "Enammo"
For Autumn and Winter Months

Wellington & Ward
Elstree, Herts

NEILL AND CO., LTD., PRINTERS, EDINBURGH.

Digitized by Google

Vol. XI. No. 122.
Monthly, 6d. Per annum, post free, 8/
25 cents. Per annum, $2.

MARCH, 1904.

Entered at New York Post-Office as Second-Class Matter, Dec. 8th, 1898.

MAR 17 1904

The Process-Photogram

FILTERS
FOR THE
TRI-COLOR
PROCESS.

COLLOTYPE
METHODS.

THE ILFORD
MONARCH
PLATE
(Purple and Gold Label)
IS THE FASTEST
AND THE FINEST
PLATE
IN THE WORLD
Of All Dealers
Made exclusively by
ILFORD, Limited, ILFORD, LONDON, E.

EDITORIAL AND ADVERTISEMENT OFFICES: Effingham House, Arundel Street, Strand, London, W.C.
PUBLISHED FOR THE PHOTOGRAM, LTD. LONDON: Dawbarn & Ward, Ltd., 6 Farringdon Avenue, E.C.
NEW YORK: Scott & Chamberlain, Liberty Building, 123 Liberty Street.

Digitized by Google

PAPER MANUFACTURED AND SUPPLIED BY HENRY LINDENMEYR & SONS.

Digitized by Google

Digitized by Google

WELLINGTON

S·C·P

The popular GASLIGHT Paper.

Try a packet of **'ART WHITE'** or **'PORCELAINE'** (The New Grade)

N.B.—If your Dealer does not happen to have it in stock, ask him to procure it, or failing this, send to us direct, enclosing **6d.** or 1/-, stating size required, and packet will be sent post free.

WELLINGTON & WARD,
ELSTREE, HERTS.

NEILL AND CO., LTD., PRINTERS, EDINBURGH

Digitized by Google

Vol. XI. No. 124.
Monthly, 6s. Per annum, post free, 8/-
25 cents. Per annum, $2.

APRIL, 1904.

Entered at New York Post Office as Second-Class Matter, Dec. 8th, 1898.

THE JOHN CRERAR
APR 29 1904

The Process Photogram

A NEW COLLODION EMULSION.

A SCREEN FOR DRY-PLATE HALF-TONES.

HALF-TONE ETCHING.

By E. KLIMSCH.

ILFORD
PLATES
TEN VARIETIES
ILFORD
PAPERS
SIXTEEN VARIETIES
Of All Dealers
Sole Makers: ILFORD, Limited, Ilford, London, E.

EDITORIAL AND ADVERTISEMENT OFFICES: Effingham House, Arundel Street, Strand, London, W.C.
PUBLISHED FOR THE PHOTOGRAM, LTD. LONDON: Dawbarn & Ward, Ltd., 6 Farringdon Avenue, E.C.
NEW YORK: Spon & Chamberlain, Liberty Building, 123 Liberty Street.

Digitized by Google

PAPER MANUFACTURED AND SUPPLIED BY HENRY LINDENMEYR & SONS

Digitized by Google

Digitized by Google

WELLINGTON

S·C·P

The popular GASLIGHT Paper.

Try a packet of **'ART WHITE'** or **'PORCELAINE'** (The New Grade)

N.B.—If your Dealer does not happen to have it in stock, ask him to procure it, or failing this, send to us direct, enclosing **6d.** or **1/-**, stating size required, and packet will be sent post free.

WELLINGTON & WARD,
ELSTREE, HERTS.

NEILL AND CO. LTD., PRINTERS, EDINBURGH.

Digitized by Google

Vol. XI. No. 125. MAY, 1904.
Monthly, 6*d*. *Per annum, post free*, 8/-
25 *cents*. *Per annum*, $2.
Entered at New York Post Office as Second Class Matter, Dec. 8th, 1898.

THE JOHN CRERAR LIBRARY MAY 19 1904

THE Process Photogram

COLOR SENSITIZERS FOR COLLODION EMULSION

BICHROMATE POISONING

MEASURING SCREEN LINEATURE

THE
ILFORD
PHOTOGRAPHIC COMPETITION
£750
IN CASH PRIZES
FOR PRINTS ON ILFORD PAPERS FROM NEGATIVES ON
ILFORD PLATES
Ilford Manufactures are Distinct, and are supplied by
ALL DEALERS
Full particulars in the May number of "Photographic Scraps"
ILFORD, Limited, ILFORD, LONDON, E.

EDITORIAL AND ADVERTISEMENT OFFICES: Effingham House, Arundel Street, Strand, London, W.C.
PUBLISHED FOR THE PHOTOGRAM, LTD. LONDON: Dawbarn & Ward, Ltd., 6 Farringdon Avenue, E.C.
NEW YORK: Spon & Chamberlain, Liberty Building, 123 Liberty Street.

PAPER MANUFACTURED AND SUPPLIED BY HENRY LINDENMEYR & SONS.

Digitized by Google

Digitized by Google

WELLINGTON

S·C·P

The popular GASLIGHT Paper.

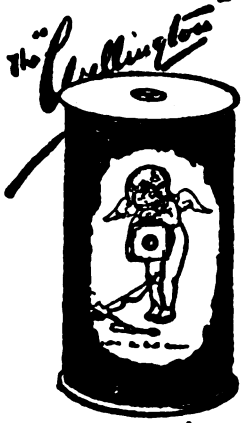
Try a packet of

'ART WHITE'

or

'PORCELAINE'

(The New Grade)



N.B.—If your Dealer does not happen to have it in stock, ask him to procure it, or failing this, send to us direct, enclosing **6d.** or **1/-**, stating size required, and packet will be sent post free.

WELLINGTON & WARD,
ELSTREE, HERTS.

NEILL AND CO., LTD., PRINTERS, EDINBURGH.

Digitized by Google

Vol. XI. No. 126.
Monthly, 6d. Per annum, post free, 8/-
25 cents. Per annum, $2.

JUNE, 1904.

Entered at New York Post Office as Second-Class Matter, Dec. 8th, 1898.

JUN 17 1904
LIBRARY

THE Process Photogram

DARK PHOTOGRAPHIC ROOM

WHERE THIS SIGN IS SEEN A DARK-ROOM IS PROVIDED FOR THE USE OF TOURIST PHOTOGRAPHERS. A LIST OF SUCH DARK-ROOMS ALL OVER THE WORLD IS PUBLISHED BY THE EDITORS OF THE PHOTOGRAM, EFFINGHAM HOUSE, ARUNDEL ST., LONDON, W.C.

A DIRECTORY OF DARK ROOMS THROUGHOUT THE . . . . WORLD . . . . IS PRESENTED WITH THIS NUMBER.

ILFORD
PLATES
ARE THE BEST PLATES MADE

OF ALL DEALERS

Sole Makers:
ILFORD, Limited,
ILFORD, London, E.

NEW HANDBOOK ON
ILFORD PLATES
30 pp., free from All Dealers, or post free direct from Ilford for one penny stamp.

EDITORIAL AND ADVERTISEMENT OFFICES: Effingham House, Arundel Street, Strand, London, W.C.
PUBLISHED FOR THE PHOTOGRAM, LTD. LONDON: Dawbarn & Ward, Ltd., 6 Farringdon Avenue, E.C.
NEW YORK: Spon & Chamberlain, Liberty Building, 123 Liberty Street.

PAPER MANUFACTURED AND SUPPLIED BY HENRY LINDENMEYR & SONS.

Digitized by Google

Digitized by Google

Digitized by Google

WELLINGTON

S·C·P

The popular GASLIGHT Paper.

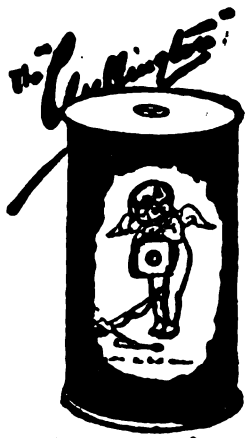
Try a packet of

'ART WHITE'

or

'PORCELAINE'

(The New Grade)



N.B.—If your Dealer does not happen to have it in stock, ask him to procure it, or failing this, send to us direct, enclosing **6d.** or **1/-**, stating size required, and packet will be sent post free.

WELLINGTON & WARD,
ELSTREE, HERTS.

NEILL AND CO., LTD. PRINTERS, EDINBURGH.

Digitized by Google

Vol. XI. No. 127.
Monthly, 6d. Per annum, post free, 8/-
25 cents. Per annum, $2.

JULY, 1904.

Entered at New York Post Office as Second-Class Matter, Dec. 8th, 1898.

THE JOHN CRERAR

THE Process-Photogram

TRI-COLOR FILTERS.

THE TRI-COLOR EXHIBITION IN PARIS.

A VISITOR'S NOTES.

FINE-ETCHING.

ILFORD

CHROMATIC
AND
RAPID ISOCHROM
PLATES
ARE THE BEST FOR
COPYING
PICTURES.

OF ALL DEALERS.

Sole Makers:
ILFORD, Limited,
ILFORD, London, E.

EDITORIAL AND ADVERTISEMENT OFFICES: Effingham House, Arundel Street, Strand, London, W.C.
PUBLISHED FOR THE PHOTOGRAM, LTD. LONDON: Dawbarn & Ward, Ltd., 6 Farringdon Avenue, E.C.
NEW YORK: Spon & Chamberlain, Liberty Building, 123 Liberty Street.

PAPER MANUFACTURED AND SUPPLIED BY HENRY LINDENMEYR & SONS.

Digitized by Google

Digitized by Google

Digitized by Google

WELLINGTON

S·C·P

The Popular GASLIGHT Paper.

TRY A PACKET OF

'ART WHITE'

or

'PORCELAINE'

(The New Grade)

N.B.—If your Dealer does not happen to have it in stock, ask him to procure it, or failing this, send to us direct, enclosing **6d.** or **1/-**, stating size required, and packet will be sent post free.

WELLINGTON & WARD,
ELSTREE, HERTS.

NEILL AND CO., LTD., PRINTERS, EDINBURGH

Digitized by Google

Vol. XI. No. 128.
Monthly, 6d. Per annum, post free, 8/-
25 *cents. Per annum,* $2.

AUGUST, 1904.

Entered at New York Post Office as Second-Class Matter, Dec. 8th, 1898.

THE JOHN CREAR
AUG 11 1904
LIBRARY

THE Process Photogram

SILVERING MIRRORS.

By HAROLD HOOD.

ROTARY INTAGLIO PRINTING.

COLLODION DRY PLATES.

ILFORD
ORDINARY PLATES
(Yellow Label)
THE BEST ALL-ROUND PLATES MADE
Supplied BACKED (Anti-Halation) to Order
OF ALL DEALERS
Sole Makers: ILFORD, Limited, ILFORD, London, E.

EDITORIAL AND ADVERTISEMENT OFFICES: Effingham House, Arundel Street, Strand, London, W.C.
PUBLISHED FOR THE PHOTOGRAM, LTD. LONDON: Dawbarn & Ward, Ltd., 6 Farringdon Avenue, E.C.
NEW YORK: Spon & Chamberlain, Liberty Building, 123 Liberty Street.

PAPER MANUFACTURED AND SUPPLIED BY HENRY LINDENMEYR & SONS.

Digitized by Google

Digitized by Google

Digitized by Google

THE

WELLINGTON

BROMIDE

Platino-Matt and Ordinary.

The most popular and finest quality medium for

ENLARGEMENTS

Grades:—(Platino-Matt) Smooth, Rough, Cream Crayon, Special Thick, and Extra Rough.
(Ordinary) Smooth and Rough.

Manufacturers:—Wellington & Ward, Elstree, Herts.

PARTICULARS IN EVERY PACKET OF BARNET MATERIALS

NEILL AND CO., LTD., PRINTERS, EDINBURGH

Digitized by Google

Vol. XI. No. 129.
Monthly, 6d. Per annum, post free, 8/-
25 cents. Per annum, $2.

SEPTEMBER, 1904.
Entered at New York Post Office as Second-Class Matter, Dec. 8th, 1898.

SEP 19 1904

THE Process Photogram

PHOTOGRAVURE ON TEXTILE FABRICS.

PHOTO-SCULPTURE— THE BAESE PROCESS.

HALF-TONE SCREENS IN FRANCE.

PRINT FROM ALL NEGATIVES ON

ILFORD

P.O.P.

REGD. TRADE MARK.

Glossy and Matt

and

POST CARDS

Glossy and Matt

Absolutely the Finest made.

OF ALL DEALERS.

EDITORIAL AND ADVERTISEMENT OFFICES: Effingham House, Arundel Street, Strand, London, W.C.
PUBLISHED FOR THE PHOTOGRAM, LTD. LONDON: Dawbarn & Ward, Ltd., 6 Farringdon Avenue, E.C.
NEW YORK: Spon & Chamberlain, Liberty Building, 123 Liberty Street.

PAPER MANUFACTURED AND SUPPLIED BY HENRY LINDENMEYR & SONS.

Digitized by Google

Digitized by Google

Digitized by Google

WELLINGTON

S·C·P

The Popular GASLIGHT Paper.

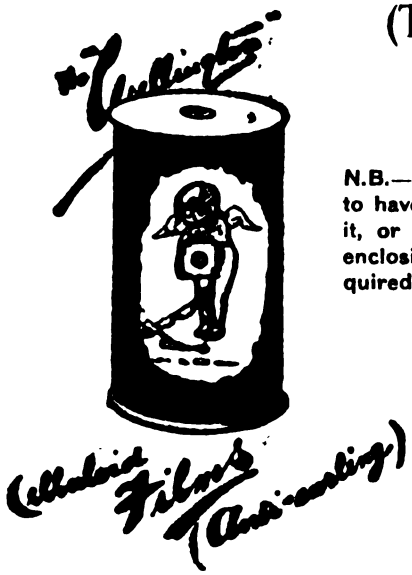
TRY A PACKET OF

'ART WHITE'

or

'PORCELAINE'

(The New Grade)



N.B.—If your Dealer does not happen to have it in stock, ask him to procure it, or failing this, send to us direct, enclosing 6d. or 1/-, stating size required, and packet will be sent post free.

WELLINGTON & WARD,
ELSTREE, HERTS.

NEILL AND CO., LTD., PRINTERS, EDINBURGH

Digitized by Google

Vol. XI. No. 130.
Monthly, 6d. Per annum, post free, 8/-
25 cents. Per annum, $2.

OCTOBER, 1904.

Entered at New York Post Office as Second-Class Matter, Dec. 20th, 1895.

THE JOHN CREAR 1904

The Process Photogram

DRY *versus* WET LIGHT-FILTERS.

THREE-LINE HALF-TONE.

THE NEW ELECTRO.

THE HIGH-LIGHT PROCESS.

AUTUMNAL TINTS
BEAUTIFULLY RENDERED
IN MONOCHROME

ILFORD

CHROMATIC PLATES
(GREEN AND WHITE LABEL)

RAPID ISOCHROM PLATES
(GREEN LABEL)

The Rapid Isochrom is twice the speed of the Chromatic

OF ALL DEALERS

EDITORIAL AND ADVERTISEMENT OFFICES: Effingham House, Arundel Street, London, W.C.
PUBLISHING OFFICES—LONDON: Dawbarn & Ward, Ltd., 6 Farringdon Avenue, E.C.
NEW YORK: Spon & Chamberlain, Liberty Building, 123 Liberty Street.

PAPER MANUFACTURED AND SUPPLIED BY HENRY LINDENMEYR & SONS.

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

THE

WELLINGTON

BROMIDE

Platino-Matt
and Ordinary.

The most popular and finest quality medium for

ENLARGEMENTS

Grades:—(Platino-Matt) Smooth, Rough, Cream Crayon, Special Thick, and Extra Rough.
(Ordinary) Smooth and Rough.

Manufacturers:—Wellington & Ward, Elstree, Herts.

BARNET

PHOTOGRAPHIC COMPETITION

FOR 1904

CLOSING DECEMBER 31st

£500 IN CASH PRIZES

PARTICULARS IN EVERY PACKET OF BARNET MATERIALS

OF ALL DEALERS—OR FROM ELLIOTT & SONS, LTD., BARNET, HERTS.

NEILL AND CO., LTD., PRINTERS, EDINBURGH

Digitized by Google

Vol. XI. No. 131.
Monthly, 6d. Per annum, post free, 8/-
25 cents. Per annum, $2.

NOVEMBER, 1904.

Entered at New York Post Office as Second-Class Matter, Dec. 8th, 1898.

THE JOHN CRERAR
NOV 17 1904

The Process Photogram

A NEW PHOTO-MECHANICAL PROCESS.

WOODBURYTYPE WITHOUT A PRESS.

HALF-TONES IN NEWSPAPERS.

THE ENGRAVER AND THE PRINTER.

THE DARK-ROOM LIGHT.

REFLECTIONS AND COPYING.

THE
ILFORD
£750
Photographic Competition
382 CASH Prizes
closes
31st March 1905

Particulars from all Dealers, or post free direct from
ILFORD, Limited, ILFORD, LONDON, E.

EDITORIAL, ADVERTISEMENT, AND PUBLISHING OFFICES:
6 Farringdon Avenue, LONDON, E.C.

NEW YORK: Spon and Chamberlain, Liberty Building, 123 Liberty Street.

PAPER MANUFACTURED AND SUPPLIED BY HENRY LINDENMEYR & SONS.

Digitized by Google

Digitized by Google

Digitized by Google

THE

WELLINGTON

BROMIDE

Platino-Matt
and Ordinary.

The most popular and finest quality medium
for

ENLARGEMENTS

GRADES :—(Platino-Matt) Smooth, Rough, Cream Crayon, Special Thick, and Extra Rough.

(Ordinary) Smooth and Rough.

Manufacturers :—Wellington & Ward, Elstree, Herts.

BARNET

PHOTOGRAPHIC COMPETITION

FOR 1904

CLOSING DECEMBER 31st

£500 IN CASH PRIZES

PARTICULARS IN EVERY PACKET OF BARNET MATERIALS

OF ALL DEALERS—OR FROM ELLIOTT & SONS, LTD., BARNET, HERTS.

Published by DAWBARN & WARD, LTD., 6 Farringdon Avenue, London, E.C.
Printed by NEILL & CO., LTD., Edinburgh.

Digitized by Google

Vol. XI. No. 132.
Monthly, 6d. *Per annum, post free*, 8/-
25 *cents. Per annum*, $2.

DECEMBER, 1904.

Entered at New York Post Office as Second-Class Matter, Dec. 8th, 1898.

THE JOHN CRERAR LIBRARY DEC 26 19

The Process Photogram

PHOTO-LITHO IN TRI-COLOR.

By F. W. PLEWS.

LANTERN SLIDES

FROM SCREEN-NEGATIVES —AN IVES PROCESS.

By F. C. BEACH.

IS THE PROCESS-MAN A PROFESSIONAL?

TRANSFER METHODS.

THE
ILFORD
SPECIAL RAPID
PLATE
(Red Label)
FASTEST PLATE
AT ITS PRICE
OF ALL DEALERS
Particulars of the Ilford £750 Competition post free from
ILFORD, Limited, ILFORD, LONDON, E.

EDITORIAL, ADVERTISEMENT, AND PUBLISHING OFFICES:
6 Farringdon Avenue, LONDON, E.C.

NEW YORK: Spon and Chamberlain, Liberty Building, 123 Liberty Street.

PAPER MANUFACTURED AND SUPPLIED BY HENRY LINDENMEYR & SONS.

Digitized by Google

Digitized by Google

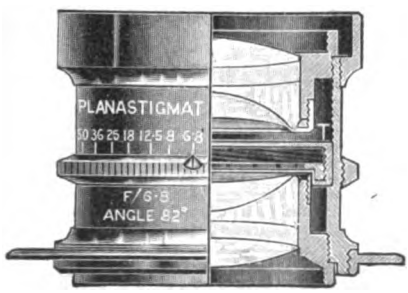
For Photographers.

NEW 8 LENS SYSTEM. F/6·8.
PLANASTIGMAT LENS. Angle 82°.

GREAT RAPIDITY, FLAT FIELD, CRITICAL DEFINITION TO EXTREME EDGE OF PLATE. GREAT DEPTH OF FOCUS.

The Best and Cheapest Anastigmats on the market.

Suitable with full aperture (F/6·8) for any subject, architecture, portrait, copying, or landscape work, and with small stop makes a splendid wide-angle lens. Single combinations perfectly corrected for astigmatism, spherical aberration, and achromatism, and can be used separately, giving a single lens of double focus of complete lens.



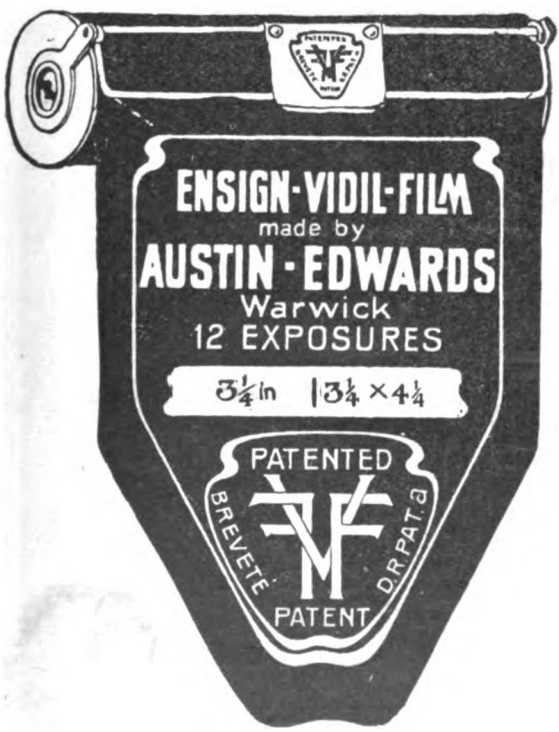
PRICES.

No.	Equiv. Focus.	Plate Covered. *f* 6·8.	*f* 12·5 to *f*/18.	*f*/50.	Price.
0	.. 4¾ in.	.. 4½ × 3½	.. 4 × 5	.. 6 × 4½	.. £3 0 0
1A	.. 5¼	.. 5 × 4	.. 6 × 4½	.. 7 × 5	.. 3 8 0
1	.. 6	.. 6 × 4½	.. 7 × 5	.. 8 × 6	.. 3 15 0
2	.. 7	.. 7 × 5	.. 8 × 6	.. 9 × 7	.. 4 10 0
3	.. 8¼	.. 8 × 6	.. 9½ × 7	.. 10 × 8	.. 6 5 0
4	.. 9½	.. 9½ × 7	.. 10 × 8	.. 12 × 10	.. 7 10 0
5	.. 10½	.. 10 × 8	.. 12 × 10	.. 14 × 12	.. 9 5 0
6	.. 12	.. 12 × 10	.. 14 × 12	.. 15 × 12	.. 11 0 0
7	.. 14½	.. 14 × 12	.. 15 × 12	.. 18 × 16	.. 13 15 0
8	.. 16½	.. 15 × 13	.. 16 × 14	.. 20 × 15	.. 17 10 0
9	.. 19	.. 20 × 15	.. 21½ × 17½	.. 24 × 20	.. 22 10 0

O. Sichel & Co.,

Telephone No. 1613 LONDON WALL.
Telegraphic Address—"FRAMEWORK, LONDON."

Offices and Showrooms.—**52 Bunhill Row, LONDON, E.C.**



"Ensign-Vidil"

Focussing Roll Films

MADE BY

AUSTIN EDWARDS

AT WARWICK.

Each Exposure Separately Focussed

by means of the focussing screen provided between each film.

Each Exposure Separately Developed

without disturbing films not yet exposed.

GEO. HOUGHTON & SON, LTD., 88 and 89 High Holborn, W.C.

a

Digitized by Google

FREE

HAVE YOU A COPY OF EDWARDS' INSTRUCTION BOOK ON PHOTOGRAPHY? Although issued as a Price List, it contains more useful information to the practical photographer than almost any handbook issued, and as a reference book to be kept in the Developing Room its value cannot be over-estimated.

ISOCHROMATIC PLATES. The concise, clear, and complete instructions contained on Isochromatic Plates are no doubt largely responsible for their enormously increased popularity during the past Season, and it is evident that photographers generally have recognised the fact that by their use there is nothing to be lost, but much to be gained.

ORDINARY PLATES. Full information is also given on Ordinary Plates for those who still fight shy of the name "Isochromatic," and for those who have only just commenced photography, or are about to commence, the book will prove especially useful.

LANTERN PLATES, both **SPECIAL TRANSPARENCY** (for Lantern Slides in the Camera) and **KRISTAL** (for Lantern Slides by Contact Gaslight Development), receive due attention, the brilliant success of the latter being a remarkable feature in recent exhibitions.

OTHER BRANDS OF PLATES, such as Cathodal (for X-Ray work), Photo Mechanical, etc., etc., also receive their share of notice, and although the amateur rarely has occasion to use them, full particulars are supplied should they be wanted.

FILM SCROLLS (to fit any make of daylight-loading roll-film camera) and **FLAT FILMS.** The instructions given on these, like all the rest in the book, have been written with a view to demonstrating the necessary manipulation in as few words as possible, without anything essential being omitted. With a beginner, lengthy and foggy instructions mean foggy negatives, and although an expert will come across a useful hint here and there, there is nothing from the beginning to the end of the book beyond the understanding of the merest novice.

Sent post free on application to **B. J. EDWARDS & CO., Ltd.**
CASTLE BAR, EALING DEAN, LONDON, W.

SPECIAL NOTICE.—For the convenience of amateurs, especially at holiday times, we are preparing a list of all dealers in photographic materials where our various plates and films are regularly kept in stock. All photographers (whether amateur or dealer) are particularly requested to assist us in making this as complete as possible.

EDWARDS

XL

FILM SCROLLS

(SEE ABOVE)

Digitized by Google

NEW INTRODUCTIONS.

BARNET
ORTHOCHROMATIC
PLATE

Yellow Green } Sensitive.

REMARKABLE FOR ABNORMAL SPEED AND CORRECT RENDERING.
VERY FINE GRAIN.
SO EASY TO WORK THAT WE RECOMMEND IT FOR EVERYDAY USE IN STUDIO AND FIELD.
WONDERFULLY FREE FROM HALATION.

Half-plates, 2/3 per dozen.

BARNET
LUSTRA-MATT
BROMIDE PAPER.

A NEW BROMIDE PAPER OF EXCEPTIONAL MERIT.
THERE IS NO BROMIDE PAPER WHICH SO FAITHFULLY RENDERS ALL THE DETAIL IN A NEGATIVE.
INCOMPARABLE FOR PURENESS IN THE WHITES.
LUMINOUS RICH BLACK SHADOWS, GIVING A WEALTH OF DETAIL.
QUICK PRINTING.

Same Price as Ordinary Bromide.

Sole Manufacturers: ELLIOTT & SONS, Ltd., Barnet, Herts, England.

Digitized by Google

SINOP

THE SIMPLIFIED COLLOTYPE PROCESS for PROFESSIONAL AND AMATEUR PHOTOGRAPHERS.

Enables charming prints to be made from **Ordinary Photographic Negatives** in various shades of printing ink on ordinary papers and cards.

Outfits **30/-** and **£3.** Little after expense. Send stamp for Instruction Booklet. Demonstrations Daily.

Sole Agents: PENROSE & CO., 109 Farringdon Road, London, E.C.

"WESNER"

COLOR PLATES

MAKE PERFECT NEGATIVES ON DULL DAYS.

Speed, 300 H. and D., ½-plate. **1s. 6d.** per dozen.

USED ALL OVER THE WORLD.

LANTERN PLATES

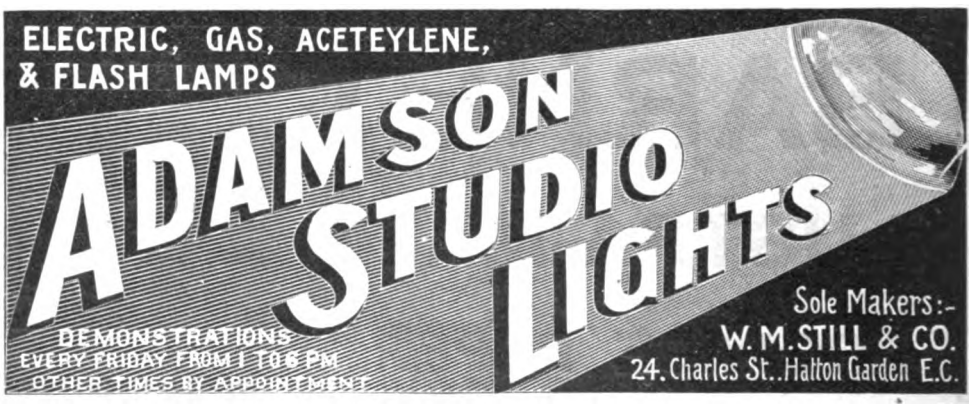
MAKE THE **BEST** SLIDES.

ALL COLORS BY DEVELOPMENT.

1s. per dozen, OF ALL DEALERS.

WRITE FOR HANDBOOK.

EDMEADS & CO., Burchell Road, Peckham, S.E.



PHOTOGRAPHIC CHEMICALS, PAPERS, PLATES.

"ORTHOCHROM T."—A new Sensitizer which gives to Plates a high sensitiveness for GREEN, YELLOW, ORANGE, and RED. NO FOG NOR STAIN.

"PANAXE."—"Axe" Brand DAYLIGHT DEVELOPER. No dark room required. No difficulty in judging the density.

"PINAKOL P."—Rapid Developing Solution, containing neither caustics nor carbonated alkalies.

"PINAKOL SALT N."—Replaces the Alkali used with organic developers.

FUERST BROS.

17 PHILPOT LANE, LONDON, E.C.

"AXE" BRAND SPECIALITIES.

"FLASHAXE."—Smokeless Flashlight Candles. All sizes.

"GOLDAXE."—Neutral Gold Toning and Fixing Salt.

"SENSAXE."—Sensitizer for Postcards, Leather, Silk, etc.

Hauff's Developers. Metol, Amidol, Ortol, Glycin, Adurol, etc.

"Axe" Brand P.O.P. and Bromide Papers. Glossy and Matte.

Send for Full Particulars and Price Lists.

Telegrams— "FUERST, LONDON."

HEADQUARTERS.

Telephones— 1050 Avenue. 5690 Central.

Digitized by Google

ILLINGWORTH'S
BROMIDE PAPER

A Well-known Experimenter writes:—"Your new Bromide Paper is a revelation; I never saw such Tones equalled before—quite equal to Platinotype."

RICH BLACKS, PURE WHITES, AND PERMANENT

Full Particulars from

ILLINGWORTH & CO., LIMITED, Willesden Junction, LONDON, N.W.

NOT A MAKESHIFT.

BEE 2/6

By Post, 2/7

QUEEN BEE 10/6

New. Higher Finish. Silver Plated. Ivorine Dial. In leather case.

Both supplied with U.S. dials for Kodaks.

RIGHT EXPOSURE

WATKINS MANUAL.

16th Thousand. 1/2 free

NEW 5/-

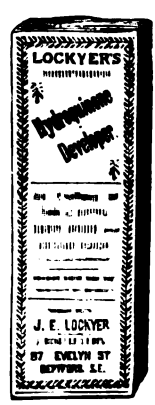
For Carbon Process, Three-Colour Work. Special Slow Paper. Examined in full light.

WATKINS METER COMPANY,

HEREFORD.

If you want GOOD PICTURES
You must use a GOOD DEVELOPER.

LOCKYER'S
HYDROQUINONE DEVELOPER



Has been proved by thousands of workers to be the BEST for

PLATES, FILMS, LANTERN SLIDES, BROMIDE PAPERS, Etc., Etc.

1/3 and **2/-** per bottle, of all Dealers.

A new **6d.** trial size is now on sale.

Send for one, and full price list, post free, **9d.**

J. E. LOCKYER, Wholesale Chemist,
244 Evelyn St., Deptford, London, S.E.

Digitized by Google

Loading the "RAJAR" CHANGER with a sealed case of Films.

3 NEW THINGS NOW READY.

WITH THE **RAJAR CHANGER**

YOU CAN CARRY WITH YOU ANY NUMBER OF **PACKS** OF FILMS, **REMOVE** A USED PACKET AND **RELOAD IN**

DAYLIGHT.

NO LARGER THAN A DARK SLIDE.

¼-PLATE, PRICE **25/-** per packet.

¼-PLATE "RAJAR" FILMS, Ordinary Speed 1/10
¼-PLATE "RAJAR" FILMS, Special Rapid 2/6

Write for descriptive pamphlet to address below.

With slide of Changer drawn half-way in the act of changing Film.

THE NEW **RAJAR CAMERA**

Quite unique.

Price, ¼-plate, **£3:12:6**

TAKES THE **RAJAR CHANGER** OR **DARK SLIDES.**

WILL REALLY GO INTO YOUR POCKET.—BECK lens, BAUSCH & LOMB shutter, BRILLIANT STATIONARY FINDER and CORNEX INDEX.

Write for descriptive pamphlet to address below.

THE NEW **CLERON** ABSOLUTELY **FLAT CUT FILM**

"AS STIFF AND FLAT AS A VISITING CARD."

TWO SPEEDS.

¼-plate ORDINARY—Wynne 45, per doz. **1/6**

¼-plate Special Rapid—Wynne 128, „ **2/-**

TRY THEM.

ASK YOUR DEALER for DESCRIPTIVE PAMPHLET, or write to

THE BROOKS-WATSON DAYLIGHT CAMERA CO.,

Abercromby Works, Gt. Homer St., LIVERPOOL.

Digitized by Google

PRIZE COMPETITIONS, 1904.

£1 1s. and 10s. 6d. are awarded monthly for the best and second best result sent in.

Extra prizes when the work deserves them. £5 5s. to the competitor who does best throughout the series on the basis of:—1st prize, 4 marks; 2nd prize, 2 marks; honorable mention, 1 mark, provided he, or she, secures at least 6 marks.

Rules.—(Please read carefully.) (1) Each print must be marked with a motto or pen name, and *must not bear* the name of the sender. A sealed envelope, bearing the motto or pen name, must contain the name and address of the competitor.

(2) The judges' decision is final.

(3) Prizes will be withdrawn from any competition in which the work is unworthy of a prize.

(4) *The Photogram* reserves the right to publish winning and "honorably mentioned" prints.

N.B.—Prints may be mounted or unmounted. Any number may be sent. Prints returned if stamps are enclosed. No coupons needed. Please mark packets "COMPETITION" No.....

Competitions.

(3) *Photography for Profit.*—Best instance told in about 200 words, with or without illustrations, of how the writer turned photography to profit. Last day, March 1st. Results in April.

(4) *Holiday Resort.*—Best brief description of holiday resort for the *pictorial worker*, with three photograms by the writer as specimens of what can be done there. Last day, April 1st. Results in May.

(5) *Architectural Detail.*—Best pictorial rendering of architectural detail, such as a font, a door, gargoyles, sundials, etc. Last day, May 1st. Results in June.

(6) *Natural History.*—Best examples of photography of animals, flowers, or other objects included under the term "natural history," as usually understood. Last day, June 1st. Results in July.

(7) *Agriculture.*—Best pictorial rendering of an agricultural operation or process, sowing, ploughing, harvesting, etc. Last day, July 1st. Results in August.

(8) *Mounting.*—Best mounting of the print to be given for this purpose in *The Photogram*, June, 1904. See special note in that issue. Last day, August 1st. Results in September.

(9) *Clouds.*—For the best photograms showing cloud forms (shape, height, etc.). See notes in *The Photogram* for March, 1904. Last day, Sept. 1st. Results in October.

(10) *Decorative Photography.*—For best example of photography applied to decoration of any article, a door, a book-shelf, screen, a page of a book. Glossy or finest matt prints from negatives of the actual object. Last day, October 1st. Results in November.

(11) *Seashore.*—Best pictorial photogram with or without figure. Last day, November 1st. Results in December. Prize-winners in No. 11 of 1903 series are disqualified.

(12) *Outdoor Portraiture.*—Best pictorial portrait taken out-of-doors. Last day, November 26th. Results, January 1905. Prize-winners in No. 12 of the outdoor portrait competition 1903 are disqualified.

FIRE—A New Competition.

A Special Competition, with certain attractive features, is commenced elsewhere this month (page 90 of the text and page xviii. of the advertisements).

FOR WINTER WORK.

MAKE YOUR EXPOSURES ON

LUMIÈRE

VIOLET LABEL

PLATES

OR FILMS.

The Fastest Plate or Film sold.

(Roll Films for all Cameras.)

AND

MAKE YOUR PRINTS ON

RADIOS

(Matt or Glossy).

The Newest and Best Gaslight Paper.

Of all Dealers, or

THE

LUMIÈRE N.A. Co., Ltd.,

4 Bloomsbury Street,

New Oxford Street,

LONDON, W.C.

Digitized by Google

PHOTOGRAMS OF THE YEAR, 1903.

THE BEST PHOTOGRAPHIC WORK OF THE YEAR REPRODUCED AND DESCRIBED.

PRICE, IN HANDSOME CLOTH LIBRARY BINDING, 3/- NET; IN ART PAPER COVERS, 2/- NET; POSTAGE, 6d.; FOREIGN, 10d.

FROM ALL BOOKSELLERS & PHOTOGRAPHIC DEALERS, OR FROM THE PUBLISHERS . . .

DAWBARN & WARD, LIMITED,

. . 6 FARRINGDON AVENUE, LONDON, E.C.

Digitized by Google

MERCK'S PHOTO-CHEMICALS

ARE SUPPLIED IN THE ORDINARY FORM AS WELL AS IN

CARTRIDGES and TABLETS.

CAREFULLY COMPOUNDED. READY FOR IMMEDIATE USE.

PYROCATECHIN, "MERCK." AN EXCELLENT DEVELOPER.

PYRO, "MERCK." Resublimed & heavy Crystals.

HYDROQUINONE, "MERCK." Gives perfectly clear solutions.

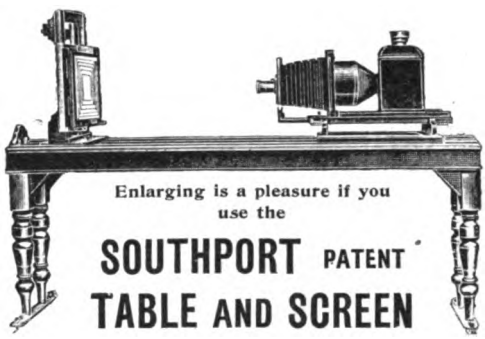
To be obtained through all Dealers, or in wholesale quantities direct from

E. MERCK, 16 JEWRY STREET, LONDON, E.C.

Rapid in Use. Easy to Work.

Accuracy Ensured.

As supplied to many of the leading Societies.



Enlarging is a pleasure if you use the

SOUTHPORT PATENT TABLE AND SCREEN

"It is one of the most complete and satisfactory contrivances for lightening the labour of the enlarger and obtaining the best results from his negative.

"The Hon. Sec. of every Photographic Society should certainly make a point of inspecting this enviable piece of British-made apparatus."—*The Practical Photographer.*

No. 1. Screen, with Universal Movements, Top Rails and Lantern Carriage £3 3 0
No. 3. Folding Table and Easel Complete for Enlarging from ¼ to 15×12, as illustration, but without Lantern 5 5 0
Complete Set of Carriers for Making Enlarged Negatives 0 10 6

To be had of all dealers, or direct from the Sole Manufacturers—

SANDERS & CROWHURST,

71 Shaftesbury Avenue, London, W.

Telephone No. 4,438 Gerrard.
Telegraphic Address: "Optogram, London."

Prepare for Spring Photography

BY GETTING A GOOD

Dark Room

The P. & E. DARK ROOMS save all trouble. They are built in sections, and can be put together, ready for use, in a few minutes.

Send Stamp for Illustrated Booklet.

The Process and Engineering Co.,

109 Farringdon Road, LONDON, E.C.

SANGER-SHEPHERD COLOUR PHOTOGRAPHY.

QUICK CHANGE, ONE PLATE, LATEST PATTERN OUTFITS.

Excellent Photographs in Colour are obtained with our smaller lens filter Outfits, complete from **25/-**; but for general work, Landscapes in changing light, Portraiture or Photo-micrography, where rapid exposures in succession are necessary, the Repeating Back with Colour Filters is recommended as the best all-round appliance. Prices from **90/-**. Write for descriptive booklets free to readers of *Photogram.*

HURTER & DRIFFIELD SYSTEM OF SPEED DETERMINATION.

All appliances made and stocked. 12-inch Photometers from £3, 10s.

Manufacturers of Science Lanterns, Rotating Sectors, Instruments for the Measurement of Light and Colour, Speed Determination, etc., and other Scientific Apparatus.

SANGER-SHEPHERD & CO., 5, 6, 7 Gray's Inn Passage, Red Lion Street, Holborn, W.C.

Digitized by Google

Index to Advertisements.

	PAGE
Aesthetique Mount Co., The	xx
Aldis Brothers	xix
Allegre, Lucien, & Co.	xix
Altrincham Rubber Co.	xxii
Booth Brothers	xxvii
Bourne & Co.	xxvii
Brooks-Watson Daylight Camera Co., Ltd., The	vi
Burroughs, Wellcome & Co.	xiii
Butcher, W., & Sons	xxiii
Correspondence	xviii
Dallmeyer, J. H., Ltd.	xv
Darlington & Co.	xxv
Dawbarn & Ward, Ltd.	viii, xiv, xxvii
Edmeads & Co.	iv
Edwards, B. J., & Co., Ltd.	ii
Elliott & Sons, Ltd.	iii
Figures, Facts, and Formulæ	xiv
Fuerst Bros.	iv
Griffin, John J., & Sons, Ltd.	xxi
Higgins, Chas. M., & Co.	xiv
Houghton, Geo., & Son, Ltd.	i
Hume, William	xv
Ilford, Ltd.	*Cover* i
Illingworth & Co., Ltd.	v
Kodak, Ltd.	xvi, xvii
Leto Photo Materials Co., Ltd., The	xi
Lindenmeyr, Henry, & Sons	xv
Lockyer, J. E.	v
Lumière N. A. Company, Ltd., The	vii
Merck, E.	ix
Miscellaneous Advertisements	xxiv
Myers & Frost	x
Penrose & Co.	iv
Photogram Abroad, The	xxvi
Photograms of the Year	viii
Powell, T. H.	xxii
Prize Competitions	vii
Process & Engineering Co., The	ix
Profits & Income Insurance Co., Ltd.	xxviii
Ross, Ltd.	xxiii
Rotary Photographic Co., Ltd., The	xii
Sanders & Crowhurst	ix
Sanger-Shepherd & Co.	ix
Sichel, O., & Co.	i
South London Photographic Society	xxii
Stanley, S.	xv
Still, W. M., & Co.	iv
Taylor, Taylor & Hobson, Ltd.	xxi
Thornton-Pickard Manufacturing Co., Ltd., The	xxviii
Vanguard Manufacturing Co., The	xxvii
Voigtländer & Sohn, A. G.	xi
Watkins Meter Co., The	v
Wellington & Ward	*Cover* iv
Wratten & Wainwright	xxvii
Zimmermann, Chas., & Co.	xxv

Index to Process Advertisements.

Dawbarn & Ward, Ltd.	Aii
Furnival & Co.	Ai
Hunters, Limited	Aiii, Aiv
Leipziger Schnellpressenfabrik	Aiv
Puetz, Hy. Wm.	Ai
Ross, Ltd.	Ai
Royle, John, & Sons	Aii
Stonhill, W. John & Co.,	Aiii

IF YOU WANT **GOOD**

Permanent Enlargements

SEND TO

Myers & Frost,

The Manchester Photo Enlarging Co.,

42 OXFORD STREET, MANCHESTER.

ESTABLISHED OVER 35 YEARS.

This speaks for itself.

Telegraphic Address—
ENLARGING, MANCHESTER.

Digitized by Google

Seltona

REGISTERED TRADE MARK

Self-Toning Paper

(Contalning Gold).

SELTONA is a P.O.P. which contains the gold necessary for toning in the emulsion. During the copying process the gold salt, through the influence of the light, is reduced so that it is contained in the finished picture firmly bound with the silver. Supplied in two grades, **Matt** and **Glossy.**

SELTONA simply requires fixing in Hypo to yield **Warm Brown** tones. **Purple** tones are obtainable by first placing the prints in a solution of common salt and water. **NO SULPHUR TONE.**

SELTONA yields prints of great brilliance, and decidedly superior to those obtained by previous processes. The prints are of exceptional clearness and purity.

Supplied in* 1/- *Packets (¼-plate, 5 by 4, 6 by 4¼, ½-plate, and 1/1 plate).

Seltona Self-Toning Postcards { Per Packet of 12, 1/- In Boxes of 50, 4/- ,, 100, 7/9

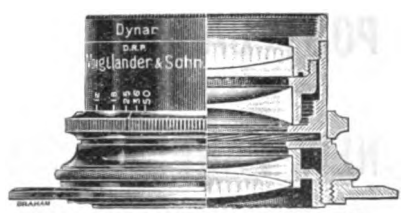
OBTAINABLE FROM ALL DEALERS, OR DIRECT FROM

The LETO Photo Materials Co., Ltd., 9 RANGOON STREET, LONDON, E.C.

Voigtländer

ESTABLISHED 1756 & Sohn A.G.

12 Charterhouse Street, Holborn Circus, E.C.



NEW "DYNAR" LENS, F/6.

¼-plate, **£3 15 0** 5×4 plate, **£4 5 0**

½-plate, **£5 0 0**

DYNAR, HELIAR, COLLINEAR LENSES,

F/6. **F/4.5.** **Series II., F/5·4. Series III., F/6·8.**

HELIAR LENS, F/4·5.

The guarantee of the lens is the quality of the Photograph.

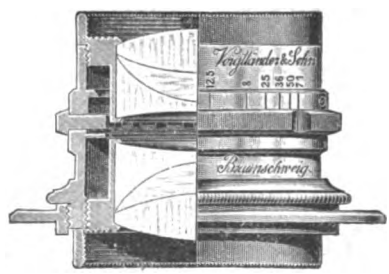
RECORD!

1756

TO

1904.

NEW LIST FREE ON APPLICATION.



VOIGTLÄNDER COLLINEAR LENSES, Series II., F/5.4. Series III., F/6.8.

Each Combination is an Anastigmat itself and can be used alone.

Digitized by Google

IMPORTANT NOTICE!

"ROTO" ROLL FILM

will be on the market in March. Sizes to fit all Cameras. Each film separately packed in tin case.

ROTOGRAPH BROMIDE PAPER

Can be strongly recommended to amateurs and professionals for its regularity in working. It is produced in two different kinds, the Matt surface giving the effect of platinum paper, and the Glossy surface producing prints similar in appearance to silver prints.

THIS PAPER IS PRODUCED IN THIN AND THICK QUALITIES. SEVEN GRADES IN ALL.

ROTOX GASLIGHT PAPER

This is acknowledged to be one of the finest papers ever put upon the market. It is very easy to work, and requires no dark room.

THIS PAPER IS MADE IN SIX GRADES, MATT AND GLOSSY.

ROTOGRAPH NEGATIVE PAPER

While possessing all the advantages of films in use, the price is about one-third that of films.

FOR NEGATIVES AND TRANSPARENCIES. RAPID AND NORMAL.

POST CARDS

ROTOGRAPH BROMIDE, MATT AND GLOSSY.
ROTOX GASLIGHT, MATT AND GLOSSY.

Per Packet of 12 Cards, 8d. Per Packet of 100, 5s.

NEW PANEL SENSITIZED BOOK POST CARDS

Size: 1¾ in. by 3½ in.

ROTOGRAPH BROMIDE	Matt and Glossy	**6d. per packet of 12**
ROTOX GASLIGHT	Matt and Glossy	3/6 100 30/- 1000

LATEST NOVELTY:

MIDGET SENSITIZED POST CARD

Size: 2¾ in. by 3½ in.

ROTOGRAPH BROMIDE	Matt and Glossy	**6d. per packet of 12**
ROTOX GASLIGHT	Matt and Glossy	3/6 100 30/- 1000

FROM DEALERS, or

THE ROTARY PHOTOGRAPHIC CO., LTD.,

14 New Union Street, Moorfields, LONDON, E.C.

Digitized by Google

TRADE MARK 'TABLOID' Brand Developers

With developers, the most important points are balance and quality of ingredients, accuracy and freshness.

It is in these points that 'Tabloid' Developers excel.

Developing agent, alkali, restrainer and preservative are scientifically adjusted to each other, and are all of exceptional purity. The quantity of each in each formula is stated, and is accurate.

The only secrets about 'Tabloid' Developers are how they are made so compactly, how they keep so well, and how they work so perfectly.

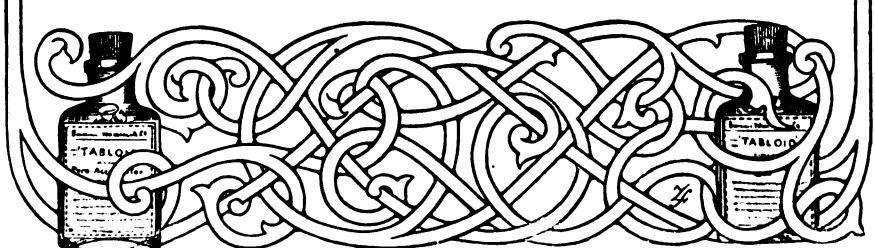
NEW BOOKLET gratis.

'TABLOID' Pyro, Pyro-Metol, Metol, Ortol, Amidol, Hydroquinone.
" Metol-Quinol, Eikonogen, Paramidophenol, Glycin.

Sold in cartons by all chemists and dealers.

AVOID IMITATIONS.

BURROUGHS WELLCOME & CO., Snow Hill Buildings, London,
481, Kent Street, Sydney, and 43, Long Street, Cape Town.



[COPYRIGHT] PHO. 62.

Digitized by Google

THE FIGURES, FACTS AND FORMULÆ OF PHOTOGRAPHY, & Guide to their Practical Use.

A special kind of Book, giving hints, precautions and directions for the use of the Formulæ, &c., which are those required in almost every branch of Practical Photography. The essence of a hundred books boiled down and put into plain language. Third Edition: 184 pages, with full index and portrait of the Editor. **1s.** nett, cloth **2s.** nett: Postage **2d.**

Digitized by Google

DALLMEYER'S NEW TELEPHOTO LENS.

Can be used in front of any small Lens, without disturbing plates or films which may be in position.

Can be used alone for higher magnification or larger plates.

An excellent Lens for all artistic photography.

THE

ADON

(Registered).

PATENT.

Mounted in Aluminium.

Measures 3¼ ins. long, 1¼ ins. diameter. Weight 4¼ ounces.

PRICE, including Solid Leather Case,

£3 : 10 : 0 *net.*

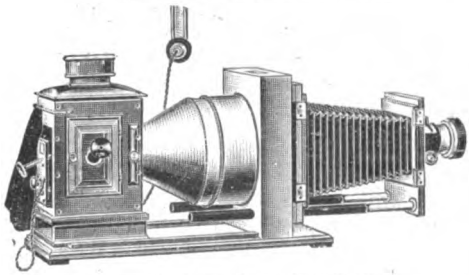
ILLUSTRATED BOOKLET with Specimens of Work FREE.

J. H. Dallmeyer, Ltd.,

25 NEWMAN STREET, LONDON, W.

HUME'S ENLARGING APPARATUS.

Designed in 1888.
Improved up to date.



Manufactured and sold by

WILLIAM HUME

1 Lothian Street, Edinburgh.

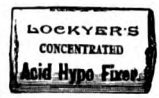
A NEW LINE

LOCKYER'S

Acid

HYPO FIXER

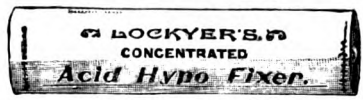
To make 10 ozs. Solution



1½d. Tubes

Contain 2 charges

2½d. Tubes



Contain 3 charges 3d. Tubes.

Quicker and cheaper than ordinary Hyposulphite of Soda It hardens the Film, and prevents frilling in hot weather, and is eliminated from the Plate quicker in washing, which is an advantage where there is a scarcity of water.

J. E. LOCKYER

244 EVELYN ST., DEPTFORD, S.E.

Digitized by Google

Notes on Pictorial Photography

THE ESSENCE OF A PICTURE.

"To find the real principal object in the picture, it is well to follow a suggestion of the late Valentine Blanchard, to go away from the picture till all details are lost, then examine it with partly closed eyes. To this I would add" (writes H. Snowden Ward in the course of "Hints to Would-be Picture-makers" in "Photograms of 1903"), "hang the picture on its side or upside down, to prevent yourself being deceived by memory and imagination if you know the picture well. Under these circumstances you should be able to see the really strong masses and lines of the picture, if it has any."

A FISCAL QUESTION FOR EXHIBITORS.

The Darlington Echo has discovered a fiscal interest in the review of French progress in pictorial photography by M. Demachy which is published in a notable annual of pictorial photography. It appears that if an English or American competitor—or, in fact, any foreigner—sends an exhibit to a French photographic exhibition, a duty would—in the ordinary course of affairs—have to be paid on his frame. This imposition is, however, got over by a concession on the part of the State, allowing a "*permis de séjour*" for two months, and each frame is stamped with the custom-house seal. But—and it is a very important "but"—only on condition that the same number of frames with the seal intact are sent back by the same post as they arrived.

HISTORIAN OR ARTIST—WHICH?

"There is no disputing the fact that the photographer of to-day is, in a sense, the historian of to morrow, for it is from his records that future generations are to learn much that is interesting and instructive of the life and progress of the world. For this reason," says *The Academy*, "if for no other, one must welcome every advance in the art of taking, printing, and preserving photographs; but why try to class this mechanical process with the fine arts? A photographer may achieve greatness in his trade, taking wonderful pictures, selecting his subjects with discretion, or, in technical studies, become of invaluable service to science; he may send us views such as "Photograms of the Year" shows of Ely Cathedral—charming things which acquaint the untravelled with man's best works, and give to the traveller his most valued of souvenirs. Indeed, there is scarcely a limit to his sphere of usefulness—he is a necessity; but when he comes to questions of nocturnes, symphonies and what not, getting out of his depth and aping the worker with brush and pencil, he is, it seems to me, losing dignity, and running the risk of making ridiculous an art whose place in the serious as in the lighter side of life is too assured to require the aid of either pretension or cant."

DISPOSES OF THE TAUNT!

Reviewing "Photograms of the Year, 1903," *The Birmingham Gazette* says:—"A volume of this sort effectually disposes of the taunt that photography is not art."

"WHAT WENT YE OUT FOR TO SEE?"

Mr Fredk. H. Evans contributes to "Photograms of the Year," so *The Lady* points out, a really noteworthy article, "And what went ye out for to see?" telling how he took four pictures (which are reproduced), and explaining what he went out to see, and how he contrived that the camera should see it.

THE EXHIBITIONS AND——?

"Next to the exhibitions themselves," writes *The Amateur Photographer*, "the publication of Mr H. Snowden Ward's annual "Photograms of the Year" is perhaps the most really important event in the course of the twelve months. Indeed, to very many this pictorial record, at once illustrative and critical, of the year's work is of greater moment, for everyone cannot visit the Exhibitions, but every photographer can, and most certainly should, be possessed of this book, which not only gives a *résumé* of the London Exhibitions, but also enables one to form an idea of photographic progress in other lands."

SOME NOTABLE OPINIONS.

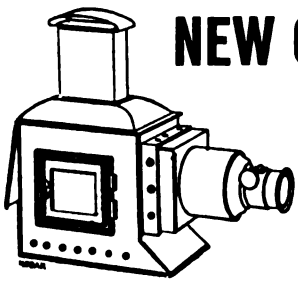
Workers living far from the centres of activity in pictorial photography are probably quicker to appreciate a volume which brings the work of the schools before them than are those in the charmed circle. This view finds expression in a letter, from a prominent worker, commenting on "Photograms of 1903":—"I was only able to pay one hurried visit to the two shows this year, so that the volume is my chief record of what has been achieved photographically this year at the Exhibitions." Harold Hood, writing to the *Daily News*, describes the book as "a portable photographic exhibition," and *The Leeds Mercury* says:—"Whether he is able to go to the Exhibitions or not, the pictorial photographer cannot live without his 'Photograms'; it is the one indispensable volume." *The Lady's Pictorial* declares:—"The volume is a delightful one to have for the mere charm of its many illustrations."

Digitized by Google

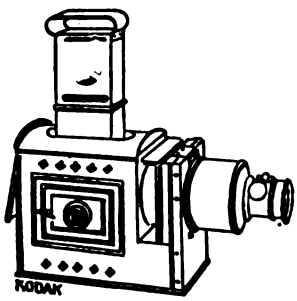
KODAK CO.'S LANTERN LIST

EVERY KIND OF LANTERN AND ACCESSORIES

NEW OPTICAL LANTERNS



No. 1.



No. 3.

No. 1.—Strongly made in japanned tin. Brass front tube, good lens, 4-in. condenser, 3-wick lamp . . **20s.**

Japanned tin case . . . **1s. 6d.**

No. 2.—Russian iron lantern, all-brass front. Lens with flasher, 4-in. condenser, 3-wick lamp, case complete, **30s.**

No. 3.—Thoroughly reliable Russian iron lantern. Superior lens and condenser. Russian iron case . . . **30s.**

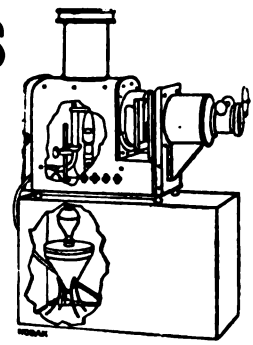
No. 4.—Similar to No. 3, but with all-brass draw tube, flasher to lens, and 4-wick lamp . . . . . **40s.**

No. 5.—Larger body lantern, specially designed front in brass, superior lens with double rack and pinion, flasher, and slot for tinter (otherwise similar to No. 4) . . . . . **52s.**

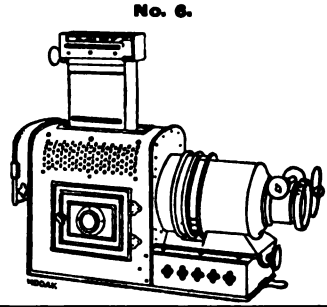
No. 6.—Specially designed body, 4½ in. condenser, fitted with the new patent "Eclipse" spirit lamp. Russian iron case, with lock and key (otherwise similar to No. 5) . . . **65s.**

No. 7.—Similar to No. 5, but with very superior lens, massive front, open stage with new adjustment, two doors with sight holes, 4-wick lamp with adjustable draught tube, Russian iron case with lock and key . . . **66s.**

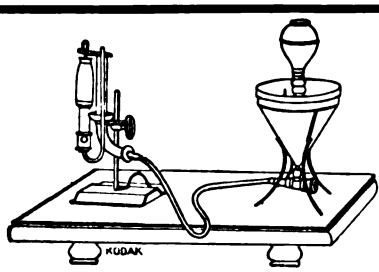
Or with "Eclipse" spirit lamp . **76s.**



No. 6.

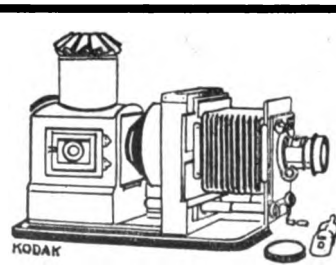


WARNING. **"KODAK" is applied to Cameras, Films, and Products made by the Kodak Co. only. Beware of inferior experimental imitations.**



THE NEW "ECLIPSE" LAMP.

This new Incandescent Spirit Lamp gives a brilliant white light of 150 c.p., and burns for 1½ hours without recharging. It is absolutely safe and can be worked by a novice. The "Eclipse" Lamp burns ordinary methylated spirit, and is suitable for enlarging or projection purposes. Price **26s.**



CANTILEVER ENLARGER.

First quality Enlarging Lantern, with every necessary movement.

Size of Condenser.

5½ in. for 4½ by 3½ **£6 10 0**
6 in. for 5 by 4 . . . . **8 10 0**
8½ in. for 6½ by 4½ **14 0 0**

MAY BE OBTAINED FROM ALL DEALERS, OR FROM

KODAK, Ltd., 41-43 Clerkenwell Road, LONDON E.C.

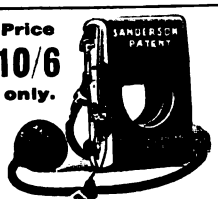
Wholesale and Retail Branches—**96 Bold Street, Liverpool; and 72-74 Buchanan Street, Glasgow.**

Retail Branches—

59 Brompton Road, S.W.; 60 Cheapside, E.C.; 115 Oxford Street, W.; 171-173 Regent Street, W.; and 40 Strand, London, W.C.

Digitized by Google

NEW MODEL 1903 Pattern. Time and Instantaneous
SANDERSON SHUTTER.
Price 10/6 only.
Complete with Speed Indicator Before or Behind Lens.
The Smallest, Neatest, Most Efficient Roller-blind Shutter made.
From all Dealers, or Sole Patentees and Manufacturers,
Altrincham Rubber Co., Mossburn Buildings, Altrincham.

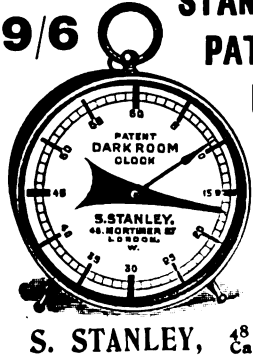


SOLARISED POSTCARDS
1,000
FREE Packets "WALLSGROVE" Developer. Sufficient to develop a 1s. packet or more of Plates or Papers. Send a penny stamped addressed envelope for return postage before 1st February. Dept. P.M.
HANDS & CO., BLETCHLEY.

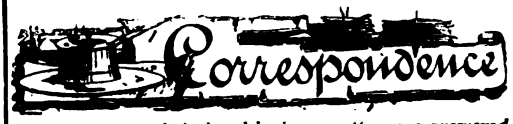
W. E. BOND, F.R.P.S.,
First Prizeman and Silver Medallist, Technical Photographer and Specialist in Trichromatic Photography.
First-class Work at reasonable prices.
Post Card Blocks in Three-Colour or Monochrome a Speciality.
PRIORY PARK, ST ALBANS.

NEW.
"I have not had a bad negative since I began to use it."
2/6
The Wathins Manual, 1/2
THE Watkins Meter Co., Hereford.

9/6
STANLEY'S PATENT DARK ROOM CLOCK,
By post, 9/10.
For Negative Making, Bromide Printing, Enlarging, etc.
It has a large Dial, and records minutes and seconds.
Send for description to
S. STANLEY, 48 Mortimer Street, Cavendish Square, W.



The Photogram "Prepaid Sale and Exchange" Columns
MAY BE OF USE TO YOU.
Send 24 words and 1s. before the 14th of the month to Effingham House, Arundel St., London, W.C.



Queries on technical and business matters are answered through the post by the Editors and staff of The Photogram, *assisted by experts on special branches.*

Stamps for reply must be enclosed. This is the sole condition; readers must not depend on seeing their replies in this column, in which only selected questions and answers of general interest are inserted.

A motto or pen-name should be added by those who do not wish their name to appear after any query which may be inserted.

Queries omitting stamp for reply or correct name and address remain unanswered. Stamps of their own countries accepted from readers abroad. American readers please note foreign mailing rates.

Please number each query, write on only one side of the paper, and address the Editors, The Photogram, Effingham House, Arundel Street, London, W.C.

Many queries reaching the Editors are answered in The Photogram *set of 8 cards, sent to any reader for one penny for postage.*

Focal Length and Enlarging. —(1) Am I right in assuming that the focus of a lens is the distance between the diaphragm and the sensitive surface of the plate when the focussing lever is set at infinity? The lens is R.R. with diaphragm between the combinations. If I am wrong in my assumption please give the correct method of finding same. My camera is a 5×4 Model C Challenge, Lizars hand and stand camera.

(2) You might also give me the formula to find the distance between lens and lantern plate and lens and negative when reducing from 5×4 to lantern size.

(3) I have a portrait lens (with no diaphragm); if I send it on to you would you report on its advisability for use as an enlarging or lantern objective, or am I asking too much?—LANTERN SLIDE.

(1) The focal length of an R.R. lens is not necessarily the distance between the diaphragm and the sharp image of a distant object. It is the distance from the image to the "node of emergence" of the lens, and this, though usually close to the diaphragm, may be before or behind it. An accurate method of finding the focal length is the following from *Figures, Facts and Formulæ*:—

"Focus on a distant object, and mark the position of the lens-front on the camera baseboard. Then focus a foot rule (or some other object of known length), and again mark the position of the lens-front on the baseboard. Now take a negative, and carefully measure the dimensions of the rule in the negative.

"To find focal length.—Multiply the difference between the two positions of the camera-front by the length of the original object, and divide by the length of the (negative) image. *N.B.*—The object should be copied as nearly same size as possible."

This operation gives the "equivalent focal length." "Back focus" means the actual distances between the lens-flange and plate—not always the same thing as "equivalent focal length."

(2) In reducing 5×4 to a 3-inch slide the distances are as follows (we quote again from *Figures, Facts*):—

"With 5-inch lens, A, 8; B, 13⅓. With 5½-inch lens, A, 8¼; B, 14⅜. With 6-inch lens, A, 9⅜; B, 16. With 6½-inch lens, A, 10⅞; B, 17⅞."

The rule is (*Figures, Facts* once more)—"To find distance from lens to original—that is, negative.—Multiply focal length of lens by the number of times of reduction, and add one focal length thereto.

"To find camera extension:—Divide focal length by number of times of reduction, and add one focal length thereto."

You will also find on pages 12 to 15 of *Figures, Facts*, other optical formulæ which would doubtless be useful to you for reference.

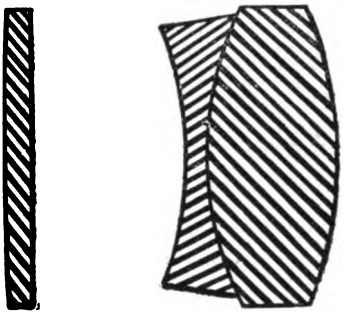
(3) We could do so, though we should think you can do it equally well. If you are reducing from 5×4 negatives your portrait lens must be at least, we should think, cabinet size, otherwise it will not cover the plate. This will mean a focal length of about eight or nine inches. A good R.R.

Continued on page xx.

Registering Copyrights. *— The Editors of "The Photogram" can arrange for the registration of photograms at Stationers' Hall. One print with properly filled up form should be sent with 1s. 6d. (postal order, not stamps). The photogram will be registered at once, and the receipt posted to the photographer. Those who have not the official form can obtain half a dozen, post free, 7d., single form, post free 1½d., on applying to "The Photogram."*

Digitized by Google

THE ALDIS SERIES III. PATENT.



A **DOUBLET** UNRIVALLED FOR COVERING POWER AND DEFINITION.

Write for full particulars from **ALDIS BROTHERS,**
Old Grange Road, Sparkhill, BIRMINGHAM.

IF YOU WANT **GOOD**

PERMANENT ENLARGEMENTS

SEND TO

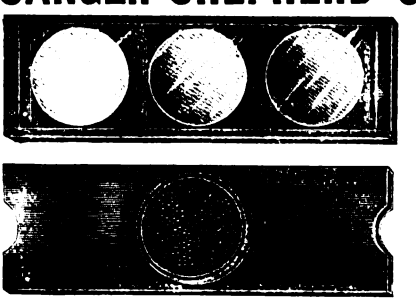
Myers & Frost, THE MANCHESTER . . PHOTO ENLARGING CO.

41 Oxford Street, MANCHESTER.

ESTABLISHED OVER 35 YEARS. ***This speaks for itself.***

Telegraphic Address—ENLARGING, MANCHESTER.

SANGER-SHEPHERD COLOUR PHOTOGRAPHY.



THIS NEW BLACK BRONZED LIGHT PATTERN REPEATING FILTER HOLDER has a closed case, with hood and leather cap as shown, and, at back, a spring ring for fitting to any lens hood, or a panel for "N. & G." and other hand cameras. They are also supplied in neat velvet-lined morocco case, complete with three most useful orthochromatic filters, and spare fitting with set of Three-Colour Filters; or three Filters for Photo-micrroscopy.

Write for New Price List, now ready, or call as below—

SANGER-SHEPHERD & CO.,

FACTORY AND OFFICES:
5, 6, & 7 GRAY'S INN PASSAGE, RED LION ST., HOLBORN, LONDON, W.C.

Digitized by Google

PRIZE COMPETITIONS, 1904.

£1 1s. and 10s. 6d. are awarded monthly for the best and second best result sent in.

Extra prizes when the work deserves them. £5 5s. to the competitor who does best throughout the series on the basis of:—1st prize, 4 marks; 2nd prize, 2 marks; honorable mention, 1 mark, provided he, or she, secures at least 6 marks.

Rules.—(Please read carefully.) (1) Each print must be marked with a motto or pen name, and *must not bear* the name of the sender. A sealed envelope, bearing the motto or pen name, must contain the name and address of the competitor.

(2) The judges' decision is final.

(3) Prizes will be withdrawn from any competition in which the work is unworthy of a prize.

(4) *The Photogram* reserves the right to publish winning and "honorably mentioned" prints.

N.B.—Prints may be mounted or unmounted. Any number may be sent. Prints returned if stamps are enclosed. No coupons needed. Please mark packets "COMPETITION" No.....

Competitions.

(1) *Picture Post Cards.*—Best set of three photograms suitable for picture post card. Novelty and decorative fitness for a post card of 3½×5½ inches considered as well as pictorial quality. Last day, Jan. 1st. Results in February.

(2) *Figures, Facts, and Formulæ.*—The most useful formula, table or concise collection of facts not in *Figures, Facts, and Formulæ*, 3rd edition. Acceptable results other than those gaining the prizes will be paid for. Last day, Feb. 1st. Results in March.

(3) *Photography for Profit.*—Best instance told in about 200 words, with or without illustrations, of how the writer turned photography to profit. Last day, March 1st. Results in April.

(4) *Holiday Resort.*—Best brief description of holiday resort for the *pictorial worker*, with three photograms by the writer as specimens of what can be done there. Last day, April 1st. Results in May.

(5) *Architectural Detail.*—Best pictorial rendering of architectural detail, such as a font, a door, gargoyles, sundials, etc. Last day, May 1st. Results in June.

(6) *Natural History.*—Best examples of photography of animals, flowers, or other objects included under the term "natural history," as usually understood. Last day, June 1st. Results in July.

(7) *Agriculture.*—Best pictorial rendering of an agricultural operation or process, sowing, ploughing, harvesting, etc. Last day, July 1st. Results in August.

(8) *Mounting.*—Best mounting of the print to be given for this purpose in *The Photogram*, June, 1904. See special note in that issue. Last day, August 1st. Results in September.

(9) *Clouds.*—For the best photograms showing cloud forms (shape, height, etc.). See notes in *The Photogram* for March, 1904. Last day, Sept. 1st. Results in October.

(10) *Decorative Photography.*—For best example of photography applied to decoration of any article, a door, a book-shelf, screen, a page of a book. Glossy or finest matt prints from negatives of the actual object. Last day, October 1st. Results in November.

(11) *Seashore.*—Best pictorial photogram with or without figure. Last day, November 1st. Results in December. Prize-winners in No. 11 of 1903 series are disqualified.

(12) *Outdoor Portraiture.*—Best pictorial portrait taken out-of-doors. Last day, November 26th. Results, January 1905. Prize-winners in No. 12 of the outdoor portrait competition 1903 are disqualified.

Continued from page xviii.

lens is much better for enlarging or reducing than a portrait, for the reason that one of lesser focal length will cover the plate, and the apparatus can thus be kept more compact.

Iron Printing Process.—I should esteem it a favor if you could inform me how to proceed after printing paper sensitised with:—

1. Green ammonio-citrate	100	gm.
Distilled water	1,000	c.c.
2. Silver nitrate	187·5	gm.
Distilled water	1,000	c.c.
Liquid ammonia, ·880	q.s.	

This gives a pleasing tone in the printing frame, but I am unable to fix it—clear water obscures the high-lights, and a weak solution of hypo reduces the picture.—GEORGE THORN.

After washing in clean water the prints should be fixed for not more than two minutes in:—

Hypo	100 gr
Soda sulphite	50 ,,
Water	7 ozs.

We expect you have been using too strong a solution for too long a time. An excellent sensitiser which most probably you would find to withstand fixing better than the one you give is the following from *Figures, Facts and Formulæ*:—

A. Green ferric ammonium citrate	110	gr.
Water	1	oz.
B. Tartaric acid	20	gr.
Water	1	oz.
C. Silver nitrate	45	gr.
Water	1	oz.

D. Swell gelatine (30 gr.) in water (1 oz.), and make fluid by heat.

Place D (fluid) in cup, add A and B and then C drop by drop. Apply warm mixture with camel-hair brush. Wash prints, and fix in hypo (10 gr. per oz.) for minute or two only. Wash in plain water.

Black Line Process.—Being a reader of *The Photogram* since 1894, I take the liberty of asking if you can give me the formula for producing copies of plans by the gum shellac and lampblack process, same as sample enclosed.—J. LINDSAY.

We think the most reliable formula for the process is that of Itterheim, which is as follows:—

Gum arabic	110 gr.,	250 gm.
Potass bichromate	31 ,,	70 ,,
Alcohol	5 mins.,	10 c.c.
Water	1 oz.,	1,000 ,,

Smooth sized paper is coated with this mixture, which keeps a few days. It is exposed under a tracing for five or ten minutes and washed in water till the lines of the drawing look engraved. It is then dried, and given an even and thin coat of shellac and lampblack.

Shellac	1 part.
Lampblack	3 parts.
Alcohol	20 ,,

Apply this with a sponge, and, when dry, immerse the paper in

Sulphuric acid	2–3 parts.
Water	100 ,,

until the superfluous black can be removed by gentle rubbing.

Toning Bromides.—Thanks for Dr. Heatherley's formulæ, p. 352. It is good, but I find on putting print in washing soda the print turns to purple black, not brown. I developed with metol hydro.—J. W. HILTON.

Dr. Heatherly writes:—"All my prints were developed with iron, so I can only repeat that with regard to these if passed after toning through a bath of washing soda the tone is deepened, and if left in the bath you get what appears to be a double intensification by mercury and platinum, the

Continued on page xxii.

CONSTRUCTIVE CRITICISM OF PRINTS.

Prints—submitted one or two at a time—will be carefully and suggestively criticised. They must be mounted and enclosed in a wrapping which is stamped and addressed inside so that it can be returned to the sender by simply refolding the paper. A piece of tissue paper should be gummed to the edge of each mount, folded over to cover the print. Suggestions as to trimming can then be pencilled on the tissue.

We beg the sender to say whether we may reproduce criticism and picture, with or without the artist's name, if we consider them of general interest.

Address—"Constructive Criticism," The Photogram, Effingham House, Arundel Street, London, W.C.

Digitized by Google

It's waste of time

to frame a photograph unless it's good, and then

it's a pleasure.

COOKE LENSES

do the

GOOD WORK.

TAYLOR, TAYLOR, & HOBSON., LTD STOUGHTON STREET WORKS, LEICESTER.
18 BERNERS STREET, LONDON, W.
AND 1186 BROADWAY, NEW YORK.

COLOUR WORK.

SEND FOR INSTRUCTION BOOKLET.

CALL FOR DEMONSTRATION.

It is now acknowledged by all practical workers that

THREE-COLOUR NEGATIVES

are best made with

COLLODION EMULSION,

because it yields better colour rendering, more rapid exposures, and plates more suitable for process purposes; besides, it is cheaper than dry plates.

COLLODION EMULSION

can be used for every purpose where orthochromatic dry plates are used.

PENROSE & CO., 109 Farringdon Road, E.C.

THEN TRY

Bourne & Co.

NEXT TIME FOR—

BRIGHT HALF-TONE PHOTO-BLOCKS.

DESIGNING AND BOOKWORK ILLUSTRATIONS.

Digitized by Google

The Amateur Photographers' Intelligence Society, Limited.

Well appointed Dark Rooms; Enlarging Lantern; Instruction and Assistance to Members.

Developing, Printing, and every kind of Photographic work undertaken, and all Materials and Apparatus sold.

Numerous valuable Prizes are awarded, during the year, in Members' Competitions.

Amateurs are invited to call, or to write for particulars of Membership.

Address—**The MANAGING DIRECTOR,**
A. P. I. S.,
52 New Bond Street, W.

Negatives Wanted.

1. Views of Towns and Interesting Watering-Places.
2. Unusual or Humorous Groups of Children, Animals, etc., Funny Productions of any kind, Character Studies, etc.
3. Photos of Black or Coloured Native Women of all Countries.
4. Negatives of Celebrities, including Actresses, etc.

We pay **10/6** each for above (negative and one clear silver print). Send sample prints, when we will return what is unsuitable, and retain what is selected, cash being sent by same post.

MILLAR & LANG,
. . Art Publishers, GLASGOW.

Continued from page xx.

print returning to its original color, but much intensified. I find that the toning bath will not keep more than a few hours. It is inclined to reduce the print, whereas Mr. Somerville's intensifies"

Sepia Post Cards.—Can you inform me how to make sensitised post cards of the kind that give a sepia color on fixing in hypo alone—I mean a formula I can apply myself? —MARSHALSEA.

Either of the following is good:—Sepia paper (white lines on brown ground from drawing).—A. Green ferric ammonium citrate, 110 gr.; water, 1 oz. B. Tartaric acid, 20 gr.; water, 1 oz. C. Silver nitrate, 45 gr.; water, 1 oz. D. Swell gelatine (30 gr.) in water (1 oz.), and make fluid by heat. Place D (fluid) in cup, add A and B, and then C drop by drop. Apply warm mixture with camel-hair brush. Wash prints, and fix in hypo (10 gr. per oz.) for minute or two only. Wash in plain water.

One-solution sepia sensitiser.—Silver nitrate (55 gr.) in water (4 to 5 drm.). Add ammonia, drop by drop, to just redissolve white precipitate; then add dilute sulphuric acid until odor of ammonia almost entirely disappears. Now add 40 gr. green ferric ammonium citrate in 6 drm. water. Keep in the dark in stoppered bottle. Fix prints in:—Hypo, 100 gr.; soda sulphite, 50 gr.; water, 7 oz.

Finders.—Can you tell me how I should correct the finder on my hand camera, which I suspect does not give me the real amount of picture on the plate?—NOVICE.

Mr. Kilbey, in *Hand-Camera Photography*, answers your question as follows:—"To find whether the finder shows the same amount of view that the lens casts on a plate, a test should be made as follows in a garden or other convenient spot:—Place the camera on a tripod or table. If on the latter, it had better be an old one, upon which you may make a pencil or chalk mark around the base of the camera. Unless this is done, when the camera moves—as it certainly will, unless fixed in some way—it will be difficult to perceive how much it *has* moved. I would suggest that you take up a position about fifteen feet from a wall, and with a piece of chalk mark upon the wall the exact amount included in your finder. Then, without moving the camera, make an exposure, develop and fix. Now, if you take the negative out into the garden, you will see whether your lens and finder coincide. If your finder embraces more than your lens, then you must carefully block out the part that is not required. This can easily be done with strips of black needle-paper, or lantern slide binders, cut the requisite width, or with a fine brush and a little black varnish.

"If the finder includes less than the lens, the camera should be sent back to the maker for the finder to be properly adjusted, as it will be almost impossible for you to alter it yourself. But this latter fault is not likely to bring about disastrous results like the former."

The Northern Exhibition.—Just as we go to press we hear from Secretary C. F. Inston that the Northern Exhibition will be fortunate in its accommodation. Four large rooms in the Walker Art Gallery, Liverpool, have been placed at the disposal of the committee, so that the show would seem to be assured of a mounting even better than that of the two London Exhibitions. The entry forms and propectus are obtainable from Mr. Inston, of 25 South John Street, Liverpool, and he will be grateful if intending exhibitors will send "Form A" to him at as early a date as possible, in order that some estimate may be formed of the probable volume of work.

"Figures, Facts."

"Must have taken years to get together."—*Nelson Leader.*

"Covers all departments of photographic work, with a more comprehensive variety of formulæ, tables, hints, short cuts, and ways of doing things than any other work."—*Snap Shots*, New York.

Writing on "The Blue Print" in the American *Amateur Photographer*, A. Scott says:—". . . The most information, both as to the preparation of the solution and the changing of the color of the image, will be found in *Figures, Facts, and Formulæ* of *The Photogram* series, which every photographer has or ought to have."

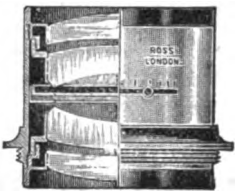
In a letter to *The Pharmaceutical Journal*, J. H. Baldock, F.C.S., writes: "'L. E. T.' . . . will find plenty of recipes for mountants in *Figures, Facts, and Formulæ*, published by *The Photogram*, 6 Farringdon Avenue, London, E.C."

"*Figures, Facts*," now in its third edition, costs 1s. nett from the dealer, or 1s. 2d. post free from Dawbarn & Ward, Ltd., 6 Farringdon Avenue, London, E.C.

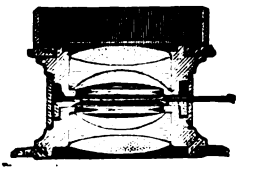
Digitized by Google

Medals and Highest Awards at all Great International Exhibitions.

ROSS-ZEISS,
'PLANAR,' 'UNAR' and 'PROTAR' LENSES.



ROSS'
New Patent
'HOMOCENTRIC' LENSES.



ROSS-GOERZ
DOUBLE ANASTIGMAT LENSES.

AN ABSOLUTELY UNRIVALLED SELECTION.

Illustrated Catalogues sent Post Free.

THE Zeiss and Goerz Patent Anastigmat Lenses are manufactured (under Licence) by ROSS, Ltd., at their Optical Works, Clapham Common, EXACTLY TO FORMULÆ SUPPLIED BY THE PATENTEES; and the optical glasses and methods of construction are precisely similar to those employed by them, the only difference between the respective lenses being that the Anastigmats made by ROSS, Ltd., are mounted in the English style, and furnished with the Standard apertures of the Royal Photographic Society.

ROSS, Ltd., Manufacturing Opticians, 111 New Bond Street, London, W. 31 Cockspur Street, Charing Cross, S.W. Works: Clapham Common, S.W.

DARLINGTON'S HANDBOOKS.

"What would not the intelligent tourist in Paris or in Rome give for such a book as this?"—*The Times.*

"A brilliant book."—*The Sketch.*

"Particularly good."—*The Academy.*

"The result of long experience and careful study."—*Glasgow Herald.*

"Written in a delightful literary style."—*Dundee Courier.*

"In this neatly bound book will be found all the interesting features, old and new, of the richest, largest, wealthiest, and most populous city in the world."—*Manchester Courier.*

"The best Handbook to London ever issued."—*Liverpool Daily Post.*

4th Ed. Enlarged, 5/-
60 Illustrations, 24 Maps and Plans.

LONDON AND ENVIRONS.
BY
Emily Constance Cook and E. T. Cook, M.A., Author of "Studies in Ruskin," etc.

LONDON: SIMPKIN, MARSHALL & Co.
LLANGOLLEN: DARLINGTON & Co.

DARLINGTON'S HANDBOOKS

"Nothing better could be wished for."—*British Weekly.*
"Far superior to ordinary guides."—*London Daily Chronicle.*

"Sir HENRY PONSONBY is commanded by the Queen to thank Mr DARLINGTON for a copy of his Handbook."

Edited by RALPH DARLINGTON, F.R.G.S.

1/- each. Illustrated. Maps by JOHN BARTHOLOMEW, F.R.G.S.

The Isle of Wight. The Vale of Llangollen. Brecon and its Beacons.
The Channel Islands. The Norfolk Broads. The Severn Valley.
Bournemouth and the New Forest. The Wye Valley.
Brighton, Eastbourne, Hastings, and St Leonards.
Norwich, Yarmouth, Lowestoft and the Norfolk Broads.
Aberystwyth, Towyn, Barmouth, and Dolgelly.
Malvern, Hereford, Worcester, and Gloucester.
Llandrindod Wells and the Spas of Mid-Wales.
Bristol, Bath, Chepstow, and Weston-super-Mare.
Llandudno, Rhyl, Bangor, Carnarvon, Anglesea.
Conway, Colwyn Bay, Bettws-y-Coed, Trefriw, Snowdon.
Exeter, Sidmouth, Exmouth, and Dawlish.
Torquay, Paignton, Teignmouth, Dartmouth.
Plymouth, Looe, Fowey, and St Austell.
Truro, Falmouth, The Lizard, Land's End, Scilly Isles.

60 Illustrations. Maps. 5/- NORTH WALES. | 100 Illustrations. Maps. 5/- DEVON and CORNWALL.

Fcap. 8vo, 1/- **HOTELS OF THE WORLD.**

A Handbook to the Leading Hotels throughout the World.

LLANGOLLEN: Darlington & Co. London: Simpkin, Marshall & Co.
PARIS AND NEW YORK: Brentano's. Railway Bookstalls and all Booksellers.

PHOTOGRAPHS.—Birthday and Season Cards from negatives by RALPH DARLINGTON, F.R.G.S., of Scenery, Ruins, etc., in Norway, Sweden, Denmark, Russia, France, Germany, Italy, Greece, Asia Minor, and Egypt, 1/-, 1/6, 2/-, 2/6. List post free of DARLINGTON & Co., Llangollen.

Digitized by Google

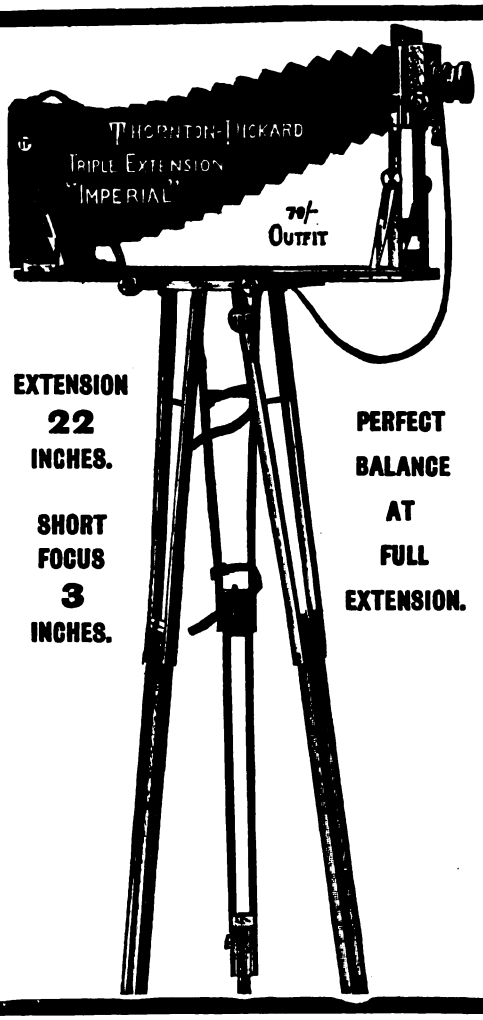
A SPLENDID NEW YEAR'S GIFT

THE THORNTON-PICKARD

NEW

70/-

½-plate COMPLETE OUTFIT



EXTENSION 22 INCHES.

SHORT FOCUS 3 INCHES.

PERFECT BALANCE AT FULL EXTENSION.

'IMPERIAL'

TRIPLE EXTENSION

A Camera of New and Unique Design.

Possesses every movement of practical value.

Spring Stretchers fitted to Back and Front, making Automatic Adjustment.

A thoroughly reliable and well-made Outfit.

For general work, copying, enlarging, and telephotography.

SPECIFICATION.

Half-plate Camera with Triple Swing Back; Rising, Falling, and Cross Front; Triple Swing Front; Triple Extension, 22 in.; Short Focus, 3 in.; Reversing Back; Double Rack and Pinion; Brass Turntable; Beck Symmetrical Lens with Iris Diaphragm f/8; Double Book-form Dark Slide, with hinged division; Three-fold Stand; Thornton-Pickard Time and Instantaneous Shutter, with Speed Indicator.

Price (Half-plate Size complete) **70/-**

WITHOUT EQUAL AT THE PRICE

In order to gain even **an approximate idea** of the remarkable value offered in this Outfit, you are respectfully requested to write for leaflet giving fullest particulars, sent post free by

THE THORNTON-PICKARD MANUFACTURING CO., LIMITED, ALTRINCHAM.

Digitized by Google

Digitized by Google

THE

WELLINGTON

BROMIDE

Platino-Matt
and Ordinary.

The most popular and finest quality medium
for

ENLARGEMENTS

GRADES :—(Platino-Matt) Smooth, Rough, Cream Crayon, Special Thick, and Extra Rough.

(Ordinary) Smooth and Rough.

Manufacturers :—Wellington & Ward, Elstree, Herts.

BARNET

GASLIGHT PAPERS

GLOSSY AND MATT.

NO DARK ROOM REQUIRED. CAN BE PRINTED AND DEVELOPED IN ANY ORDINARY GASLIT ROOM.

DO NOT FORGET THAT THE

BARNET £500 CASH PRIZES COMPETITION

CLOSES DEC. 31st.

NO POSTPONEMENT.

Coupon in every packet of Barnet materials, of all Dealers, or of ELLIOTT & SONS Ltd., Barnet, Herts.

Published by DAWBARN & WARD, LTD., 6 Farringdon Avenue, London, E.C.
Printed by NEILL & CO., LTD., Edinburgh.

Digitized by Google

Digitized by Google

THE JOHN CRERAR LIBRARY CHICAGO

Digitized by Google

THE JOHN CRERAR LIBRARY CHICAGO 1894

Digitized by Google

UNIVERSITY OF CHICAGO
098 454 112

Digitized by Google